

3  
No. 2759

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United States  
Circuit Court of Appeals  
For the Ninth Circuit.

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Transcript of Record.  
(IN THREE VOLUMES.)

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COLUMBIA GRAPHOPHONE COMPANY, a  
Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corpora-  
tion,

Appellee.

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VOLUME I.  
(Pages 1 to 352, Inclusive.)

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Upon Appeal from the United States District Court for the  
Northern District of California, Second Division.

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Filed

APR - 4 1916



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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur. Title heads inserted by the Clerk are enclosed within brackets.]

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*In the District Court of the United States for the  
Northern District of California, Second Division.*

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

**Bill of Complaint.**

FOR INFRINGEMENT OF PATENT, NO. 771,441.

Now comes the Searchlight Horn Company, plaintiff in the above-entitled suit and files this, its bill of complaint against Columbia Graphophone Company, defendant, and for cause of action alleges:

1. That the full name of the plaintiff is Searchlight Horn Company, and during all the time of the infringement hereinafter complained of plaintiff was and still is a corporation created under the laws of the State of New York and having its principal place of business at the city of New York in the State of New York.

2. That prior to February 1, 1913, the full name of the defendant was Columbia Phonograph Company, General; that on February 1, 1913, the name of the defendant was changed to and ever since has been and now is Columbia Graphophone Company; that for more than six years last past said defendant has been and still is a corporation created and existing under and by virtue of the laws of the State of West Virginia and having a regular and established place of business in the Northern District of Cali-

fornia with an agent engaged in conducting such business in said district.

3. That the ground upon which the Court's jurisdiction depends is that this is a suit in equity arising under the patent law of the United States.

4. That heretofore, to wit, on October 4, A. D. 1904, the [1\*] Government of the United States granted, issued and delivered to one Peter C. Nielsen letters patent of the United States for a new and useful invention, to wit, a horn for phonographs and similar machines; that said letters patent bore date October 4, A. D. 1904, and were numbered 771,441, and granted to the said Nielsen and his heirs and assigns the sole and exclusive right to make, use and vend the said invention throughout the United States of America and the territories thereof during the period of seventeen years from October 4th, A. D. 1904; that a more particular description of the invention patented in and by said letters patent will fully appear from said letters patent which are ready in court to be produced by plaintiff or a duly authenticated copy thereof and of which profert is hereby made.

5. That heretofore, to wit, on January 4th, A. D. 1907, by an assignment in writing plaintiff became and ever since has been and is now the sole owner and holder of said letters patent and all the rights thereby granted.

6. That since January 4th, A. D. 1907, plaintiff has made and sold devices covered and claimed by said letters patent and upon each of said devices has marked the word "Patented" together with the

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\*Page-number appearing at foot of page of original certified Record.

date and number of said letters patent.

7. That heretofore, to wit, on May 9, A. D. 1911, plaintiff herein commenced an action at law in the above-entitled court against Sherman, Clay & Company, a corporation created under the laws of the State of California and doing business in the Northern District of California, and on said last-named day filed its declaration whereby it alleged the issuance of the aforesaid letters patent No. 771,441, to Peter C. Nielsen and the ownership thereof by plaintiff since January 4, A. D. 1907, and that said Sherman, Clay & Company had infringed upon said letters patent whereby plaintiff [2] had been damaged in the sum of fifty thousand dollars and prayed that judgment be rendered against said Sherman, Clay & Company for said damages; that thereafter, to wit, on May 25, A. D. 1911, said Sherman, Clay & Company appeared in said action and filed its answer denying all the allegations in said declaration, and thereafter, to wit, within thirty days before the trial of said action filed a notice in writing under section 4920 of the Revised Statutes of the United States setting up that the said Nielsen was not the first or original or any inventor of the thing patented in and by said letters patent No. 771,441, but that long prior to the supposed invention thereof by the said Nielsen the thing patented in and by said letters patent No. 771,441, was shown, described and patented in and by certain prior letters patent of the United States and of Great Britain which were specified by given numbers, and that long prior to the supposed in-

vention by the said Nielsen the thing patented in and by said letters patent, No. 771,441, had been made, used and sold by and was known to others in this country, and the names of the persons alleged to have had such prior knowledge and use together with the places where the same was used were set up in detail in said notice; that upon the issues so joined the said action at law against Sherman, Clay & Company came on for trial before the above-entitled court and a jury, which said trial commenced on October 1, A. D. 1912, and was concluded on October 4, 1912; that evidence was introduced by both sides, and the case was fully and fairly tried on its merits and after argument by counsel on both sides was submitted to a jury for decision; that thereafter on October 4, A. D. 1912, said jury returned its verdict in favor of the plaintiff in said action and against Sherman, Clay & Company, the defendant therein, and assessed damages in favor of said plaintiff [3] and against the said defendant at the sum of \$3,578; that thereupon a judgment was duly made and entered in favor of the said plaintiff and against the said Sherman, Clay & Company, defendant in said action, for the said sum of \$3,578 and costs of suit; that thereafter in due season defendant in said action duly and regularly petitioned said Court for a new trial and after arguments of counsel and due consideration of the matter said Court denied said motion for a new trial; that thereafter the plaintiff in the said suit voluntarily remitted from the amount of said damages all of said damages over and

above the sum of \$1, and the said judgment has never otherwise been changed, altered or modified but is still in full force and effect.

8. That continuously during six years last past the defendant herein without the license or consent of plaintiff, in the Northern District of California and elsewhere, has used and sold and is now using and selling horns for phonographs containing and embracing the invention patented in and by the said letters patent No. 771,441, and thereby has infringed and is now infringing upon said letters patent.

9. That by reason of the infringement aforesaid, the defendant has realized profits and the plaintiff has suffered damages, but the amount of such profits and damages is unknown to plaintiff and can be ascertained only by an accounting.

10. That the plaintiff has requested the defendant to desist from further infringement of said letters patent and to account to plaintiff for the damages suffered by plaintiff and the profits realized by defendant from and by reason of said infringement, but the defendant has failed and refused to comply with the said request or any part thereof, and is now extensively selling said infringing horns.

[4]

11. That the defendant threatens and intends to continue the said infringement and unless restrained therefrom by this court will continue to so infringe, whereby plaintiff will suffer great and irreparable injury, for which it has no plain, speedy or adequate remedy at law.



WHEREFORE, plaintiff prays:

First. That upon the filing of this bill a preliminary injunction be granted enjoining and restraining the defendant, its officers, agents, servants, employees, pending the suit and until the further order of the Court from making, using or selling, or threatening, advertising or offering to make, use or sell any horns for phonographs containing the invention patented in and by said letters patent No. 771, 441, and from infringing upon said letters patent in any manner whatever or aiding or abetting or contributing to any such infringement.

Second. That upon the final hearing the defendant, its officers, agents, servants and employees, be permanently and finally enjoined and restrained from making, using or selling any horns for phonographs or other machines containing the invention patented in and by the said letters patent No. 771,441, and from threatening or advertising or offering to make, use or sell any such horns and from infringing upon said letters patent in any manner whatever, or aiding, abetting or contributing to any such infringement, and that the writ of injunction accordingly be issued out of and under the seal of this court enjoining the defendant, its officers, agents, attorneys, servants and employees as aforesaid.

Third. That it be ordered, adjudged and decreed that the plaintiff have and recover from the defendant the profits realized by the defendant and the damages sustained by the plaintiff from and by reason of the infringement aforesaid, together with

costs [5] of suit and such other and further relief as to the Court may seem proper and in accordance with equity and good conscience.

Fourth. That upon the filing of this bill the writ of subpoena ad respondendum be issued, directed to Columbia Graphophone Company, the defendant herein, commanding it to appear and answer this bill of complaint in accordance with the rules of the court.

SEARCHLIGHT HORN COMPANY.

By JOHN H. MILLER and

W. K. WHITE,

Solicitors for Plaintiff.

JOHN H. MILLER and

W. K. WHITE,

Of Counsel for Plaintiff,

Crocker Building,

San Francisco, California.

United States of America,

Southern District of New York,

City and County of New York,—ss.

W. H. Locke, Jr., being duly sworn, deposes and says that he is an officer, to wit, President of Searchlight Horn Company, plaintiff, in the within-entitled action; that he has read the foregoing bill of complaint and knows the contents thereof; that the same is true of his own knowledge, except as to the matters which are therein stated on his information or belief, and as to those matters, that he believes it to be true; that the reason this verification is made by deponent and not by the plaintiff is that

the plaintiff herein is a corporation.

WILLIAM H. LOCKE, Jr.

Subscribed and sworn to before me this 11th day of June, 1913.

[Seal] M. J. DEERY,  
Notary Public (23), New York Co. [6]  
No. 29,024.

State of New York,  
County of New York,—ss.

I, William F. Schneider, clerk of the county of New York, and also clerk of the Supreme Court for the said county, the same being a court of record, do hereby certify that M. J. Deery before whom the annexed deposition was taken, was, at the time of taking the same, a notary public of New York, dwelling in said county, duly appointed and sworn, and authorized to administer oaths to be used in any court in said State, and for general purposes; that I am well acquainted with the handwriting of said notary, and that his signature thereto is genuine, as I verily believe.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the said court and county, the 11 day of June, 1913.

[Seal] W. F. SCHNEIDER,  
Clerk.

[Endorsed]: Filed July 24th, 1913. W. B. Mal-  
ing, Clerk. [7]



*In the District Court of the United States, for the  
Northern District of California, Second Division.*

IN EQUITY—No. 30.

ON NIELSEN HORN PATENT NO. 771,441.  
SEARCHLIGHT HORN COMPANY,  
Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,  
Defendant.

**Answer.**

The Answer of the above-named defendant, Columbia Graphophone Company, to the Bill of Complaint of the above-named plaintiff.

The defendant herein, now and at all times hereafter saving and reserving to itself all and all manner of benefit and advantage of exception which can or may be had or taken to the many errors, uncertainties, and insufficiencies in said plaintiff's Bill of Complaint contained, for Answer to the whole of said Bill or to so much or such parts thereof as it is necessary and material for this defendant to answer unto, answering says:

I.

The defendant is not advised, save by the Bill, as to the truth of the allegations of paragraph 1 thereof; and therefore calls upon complainant for full proof thereof.

## II.

Defendant does not deny the allegations of paragraph 2 of the Bill.

## III.

Defendant does not deny the allegations of paragraph 3 of the Bill. [8]

## IV.

Defendant does not deny the issuance, on October 4, 1904, of a patent bearing the number 771,441, and purporting to be granted to one Peter C. Nielsen for improvements in horns for phonographs or similar machines; but defendant denies that said patent sets forth anything novel or patentable, and denies that said patent is valid in any material or substantial respect. And, upon information and belief, the defendant asserts that a horn made in strict conformity with all the disclosures of the Nielsen Patent in suit presents no acoustical advantage whatever over the ordinary and well known horn of the same dimensions but not containing any of the features alleged or supposed to be novel with the said Nielsen Patent; and that the said features of supposed novelty set forth by the said Nielsen Patent are merely common expedients, and were all of them well-known to ordinary mechanics in that art long before the alleged invention thereof by said Nielsen. And, upon information and belief, the defendant denies the remaining allegations of said paragraph 4.

## V.

Defendant is not advised, save by the Bill, as to the truth of the allegations of paragraph 5 thereof,

and therefore calls upon complainant for full proof of the same.

#### VI.

Defendant has no knowledge as to the truth of the allegations of paragraph 6 of the bill; but, upon information and belief denies the same.

#### VII.

Only by the allegations of the Bill and by hearsay (if at all) is defendant advised of the matters set forth in paragraph 7 of the Bill; and therefore calls upon complainant for full proof of the same. But defendant has been informed and believes, and [9] therefore avers, that upon petition of Sherman, Clay & Co. (the defendant referred to in said paragraph 7) the Court held that unless this complainant should accept nominal damages only, a new trial would be granted; and that it was for that reason that this complainant remitted the amount of damages as set forth in said paragraph 7. Moreover, this defendant has been further advised and believes, and therefore avers, that by Writ of Error the action against Sherman, Clay & Company (referred to in said paragraph 7) has been carried to the Honorable the United States Circuit Court of Appeals for the Ninth Circuit, and that said Court is expected to hear argument upon said Writ of Error within a few weeks, whereupon it is expected that said Court of Appeals will reverse the judgment referred to in said paragraph 7.

#### VIII.

Defendant does not deny that it has been selling

phonograph horns in this district and elsewhere; but defendant has been advised and believes, and therefore avers, that no horn sold by it contains and embraces any novel and patentable invention claimed or patented, or purporting to be claimed or patented, in and by the Nielsen Patent here in suit.

## IX.

By reason of the foregoing, defendant says it should not be called on to make any answer to paragraph 9 of the Bill.

## X.

By reason of the foregoing, defendant says it should not be called on to make any answer to paragraph 10 of the Bill.

## XI.

By reason of the foregoing, defendant says it should not be called on to make any answer to paragraph 11 of the Bill. [10]

And, without waiving any of the matters and things set forth, but repeating and insisting upon the same, this defendant, further answering, says:

## XII.

That this defendant has been informed, and believes, and therefore avers, that the said Nielsen Patent is null and void, because the matters and things patented or purporting to be patented therein, were not patentably novel in view of the state of the art set forth in paragraph XIV of this Answer; that the matters and things claimed in said Nielsen Patent and all material and substantial parts thereof were merely ordinary mechanical expedients and were well known to ordinary workmen long prior to Niel-

sen's supposed invention thereof, and did not involve or constitute invention; and that a horn containing the supposedly novel features of said Nielsen Patent does not produce any new or useful or improved results, or any results different from those of horns found in the prior art.

### XIII.

Defendant has been advised, and believes, and therefore avers, that by reason of limitations placed upon the claims of said Nielsen Patent, during the prosecution of the application therefor in the United States Patent Office, the owner of said patent is estopped to assert therefor a construction sufficiently broad to include any horns used or sold by this defendant; and that, for the purpose of deceiving the public, the description of the alleged invention presented to the Patent Office (in the application for the patent in suit) was made to contain less than the whole truth relative to the alleged invention or discovery, or more than was necessary to produce the desired result (which result is produced equally well by any ordinary horn of the prior art); that the alleged invention purporting to be patented by the said Nielsen [11] Patent was, at the time of said Nielsen's alleged invention, and is now, without utility; and that whatever utility may be attributed to a horn constructed in full accordance with all the disclosures of said Nielsen Patent, is found equally well and to the same extent in any horn of the prior art of the same material and dimensions but *not* containing any of the features set forth as novel by the said Nielsen Patent.



## XIV.

And, in view of the state of the art as below set forth, this defendant says that the Nielsen Patent in suit, and each and every claim thereof, never possessed novelty, or utility, or the quality of invention; and that said patent is therefore invalid in all respects. The state of the art is set forth in and by the following letters patent and printed publications, to wit: [12]

## UNITED STATES PATENTS.

Number.	Name.	Date.
982,	Wyberd, (Reissue),	June 12, 1860;
8,824,	Shirley, (Design),	Dec. 7, 1875;
10,235,	Cairns, (Design),	Sept. 11, 1877;
12,442,	Villey, (Reissue),	Jan. 30, 1906;
16,044,	Bailey, (Design),	April 14, 1885;
17,627,	Carr, (Design),	Aug. 16, 1887;
19,977,	Miller,	July 1, 1890;
26,640,	Valdwell, (Design),	Feb. 16, 1897;
29,791,	Pieri, (Design),	Dec. 13, 1898;
30,653,	Littledale, (Design),	May 2, 1899;
34,907	McVeety & Ford, (Design),	Aug. 6, 1901;
72,422,	Saxton,	Dec. 17, 1867;
165,912,	Barnard,	July 27, 1875;
181,159	C. W. Fallows,	Aug. 15, 1876;
186,718,	Einig,	Jan. 30, 1877;
187,589,	Boesch,	Feb. 20, 1877;
216,188,	Irwin & Reber,	June 3, 1879;
229,212,	Vance,	June 22, 1880;
240,038,	Powelson & Daves,	April 12, 1881;
240,868,	Waters & Waters,	May 3, 1881;
274,930,	Frink,	April 3, 1883;

Number.	Name.	Date.
276,251,	Lesson,	April 24, 1883;
320,424,	Woodward,	June 16, 1885;
337,971,	McLaughlin,	March 16, 1866;
362,107,	Penfield,	May 3, 1887;
406,332,	Bayles,	July 2, 1889;
409,196,	Hart,	Aug. 20, 1899;
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427,658,	Bayles,	May 13, 1890;
453,798,	Gersdorf,	June 9, 1891;
455,910,	Gordon,	July 14, 1891;
491,421,	Gersdorf,	Feb. 7, 1893;
534,543,	Berliner,	Feb. 19, 1895;
578,737,	Haas,	Mar. 16, 1897;
609,983,	Wolhaupter,	Aug. 30, 1898;
612,639,	Clayton,	Oct. 18, 1898;
632,015,	Hogan,	Aug. 29, 1899;
647,147,	Meyers,	Apr. 10, 1900;
648,994,	Porter,	May 8, 1900;
651,368,	Lanz,	June 12, 1900;
679,659,	Wolhaupter,	July 30, 1901;
692,363,	Runge,	Feb. 4, 1902;
693,460,	Takaba,	Feb. 18, 1902;
699,928,	McVeety & Ford,	May 13, 1902;
701,377,	Norcross,	June 3, 1902;
705,126,	Osten & Spalding,	July 22, 1902;
712,517,	Gates,	Nov. 4, 1902;
738,342,	Marten,	Sept. 8, 1903;
739,954,	Villey,	Sept. 29, 1903;
748,969,	Melville,	Jan. 5, 1904;
758,716,	Storrs,	May 3, 1904;
763,808,	Sturges,	June 28, 1904;

Number.	Name.	Date.
769,410,	Schoettel,	Sept. 6, 1904;
770,024,	Ruggiero & Bongiorno,	Sept. 13, 1904;
798,876,	Conger, et al.	Sept. 5, 1905;

UNITED STATES REGISTERED TRADE-  
MARK.

31,772,	Kaiser,	July 5, 1898;
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[14]

BRITISH PATENTS.

9,762,	of July 5, 1888,	to Randall,
22,612,	of Nov. 13, 1899,	to Hogan,
7,594,	of Apr. 24, 1900,	to Thompson,
9,727,	of May 10, 1901,	to Runge,
22,273,	of Nov. 5, 1901,	to Runge,
17,786,	of Aug. 13, 1902,	to Fairbrother,
20,146,	of Sept. 15, 1902,	to Villey,
20,567,	of Sept. 20, 1902,	to Tourtel,
5,183,	of March 5, 1903,	to Cockman,
14,730,	of July 2, 1903,	to Tourtel,

FRENCH PATENTS.

31,470,	L. Scott, and certificate of addition thereto, July 29, 1859,	Mar. 25, 1857;
301,583,	Guerrero,	June 23, 1900;
318,742,	Turpin,	Feb. 17, 1902;
321,507,	Runge,	May 28, 1902;
331,566,	Hollingsworth,	April 28, 1903;



## BELGIAN PATENTS.

157,009,	Runge,	June 10, 1901;
163,518,	Runge,	May 27, 1902;
175,354,	Aneion,	Jan. 29, 1904;
175,785,	Combret,	March 1, 1904;
176,179,	Sieger,	March 19, 1904;
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## PRINTED PUBLICATIONS.

The Electrical World, published at New York, N. Y., article on "Berliner's Gramophone," pp. 255-256, issue of Nov. 12, 1887, and article of "The Improved Gramophone," p. 80, issue of August 18, 1888.

A paper read before the Franklin Institute, May 16, 1888, on the Gramophone, by Emile Berliner, published in the Journal of the Franklin Institute at Philadelphia, Pa., June, 1888, and by Rufus H. Darby, printer, in 1894, at Washington, D. C., and many other publications describing Scott's Phonautograph of 1857.

The Metal Workers Pattern Book, by A. O. Kittredge, 3d Edition, published in New York, N. Y., 1884, by David Williams, Printer.

The Metal Worker, a periodical, published at New York, N. Y., September 1, 1900, pp. 50-56 inclusive thereof.

—and in many other prior patents and printed publications, whose respective names, dates and numbers, and whose respective titles, publishers and places of publication, are at this time unknown to this defendant, but which when discovered it prays leave to set forth by amendment to this Answer.

## XV.

And, answering further upon information and belief, this defendant says that the alleged improvements and inventions set forth by said Nielsen Patent, and all material and substantial parts thereof, were well known to and publicly used by others, and were on sale, within the United States long prior to the alleged invention thereof by the said Nielsen, and for more than two years before his application for the patent in suit, to wit, by each of the patentees and other persons named in and by the various patents and printed publications set forth in paragraph XIV of this Answer,—at the several places named in said patents as the residence of the respective patentees, and elsewhere within the United States, the last known addresses of whom are those set forth in said patents and printed publications; and also by the following, at the places recited opposite each name and elsewhere within the United States, whose last known addresses are those below given, to wit:

[16]

Name.	Address.
C. D. Emerson,	New York, N. Y.
Gianni Bettini,	New York, N. Y.
Bettini Phonograph Co.,	New York, N. Y.
John Kaiser,	New York, N. Y.
C. A. Senne,	New York, N. Y.
Henry Staude,	New York, N. Y.
Edward A. Merri- t,	New York, N. Y.
Walcutt, Miller & Co.,	New York, N. Y.
Cleveland Walcutt,	New York, N. Y.

Name.	Address.
Ellsworth A. Hawthorne,	Phila., Pa. (of Bridgeport, Conn.)
Horace Sheble,	Philadelphia, Pa.
Bartolo Ruggiero, & Gaetano Bongiorrio,	Brooklyn, N. Y.
Hollister Sturges,	New York, N. Y.
John W. George,	Phila., Pa. (of Bridgeport, Conn.)
George S. Saxton,	St. Louis, Mo.
William H. Barnard,	Sedalia, Mo.
Charles W. Fallows,	Philadelphia, Pa.
Emil Boesch,	San Francisco, Cal.
Thomas W. Irwin,	Allegheny, Pa.
George K. Reber,	Pittsburgh, Pa.
Nathaniel C. Powelson,	Brooklyn, N. Y.
Charles Deavs,	New York, N. Y.
Isaac P. Frink,	New York, N. Y.
Philip Lesson,	Newark, N. J.
George W. Woodward,	Brooklyn, N. Y.
Henry McLaughlin,	Bangor, Me.
Charles R. Penfield,	Rochester, N. Y.
James C. Bayles,	New York, N. Y.
Charles L. Hart,	Brooklyn, N. Y.
Augustus Gersdorff,	Bridgeton, N. J.
William J. Gordon,	Philadelphia, Pa.
Augustus Gersdorff,	Washington, D. C.
Philip J. Hass,	Marengo, Ia.
James Clayton,	New York, N. Y.
Major D. Porter,	New Haven, Conn.
John Lans,	Pittsburgh, Pa.
Charles McVeety,	Philadelphia, Pa.
John F. Ford,	Philadelphia, Pa.

Name.	Address.
George Osten,	Denver, Col.
William P. Spaulding,	Denver, Col.
Albert S. Martin,	E. Orange & Newark, N. J.
Frederick S. Shirley,	New Bedford, Mass.
Edward Cairns,	Morristown, N. J.
Walter H. Miller (of Orange, N. J.),	New York, N. Y. & W. Orange, N. J.
Alex. N. Pierman (of Newark, N. J.),	W. Orange, N. J.
Edward M. Meeker (of Orange, N. J.),	W. Orange, N. J.
Harvey N. Emmonds,	E. Orange, N. J.
Arthur Collins (of New York, N. Y.),	W. Orange, N. J.
John Riley,	W. Orange, N. J.
James Burns,	W. Orange, N. J.
Frederick S. Brown (of Montclair, N. J.),	W. Orange, N. J.
C. J. Eichhorn,	Newark, N. J.
John Sanderson,	Pittsburgh, Pa.
Harry Betzler,	Pittsburgh, Pa.
Leonard Terhune (of Orange, N. J.),	Newark, N. J.
George C. Magill,	Newark, N. J.
Peter Schoepple,	Newark, N. J.
John H. B. Conger,	Newark, N. J.
Thomas H. Brady,	New Britain, Conn.
August Doig,	New Britain, Conn. [17]
William J. Noble,	New Britain, Conn.
James Connelly,	New Britain, Conn.
Noble & Brady, and their employees,	New Britain, Conn.

Tea Tray Co., and their employees, Newark, N. J.

Thomas A. Edison, Edison Phonograph Works and National Phonograph Co., and their employees, Orange, N. J.

New Jersey Phonograph Co., and their employees, Newark, N. J.

North American Phonograph Co., and their employees, Jersey City, N. J.

—and by many others, at this time not known to this defendant, but whose names and locations when discovered it prays leave to set forth by amendment to this Answer.

## XVI.

This defendant says that it has never manufactured, or caused to be manufactured, any talking-machine horns whatever; and that all the horns used or sold by it during the past seven years were procured from one of two sources only, to wit, either from the Hawthorne Manufacturing Co. of Bridgeport, Connecticut, or its predecessor Ellsworth A. Hawthorne of said Bridgeport, or his predecessor the Hawthorne & Sheble Manufacturing Co. of Philadelphia, or its predecessor the firm of Hawthorne & Sheble of Philadelphia, or from the National Metal Stamping and Manufacturing Co. of Newark, New Jersey, or its predecessor the Tea Tray Co., of said Newark, and from no other source whatever. And this defendant has been advised and believes, and therefore avers, that during and prior to the year 1906 and continuously ever since, said Hawthorne concerns and said Tea Tray Co. (and its successor), and also the Standard Metal Mfg. Co. of Newark, New Jersey,



have been and now are openly and notoriously manufacturing and selling,—and this defendant and the Victor Talking Machine Co. of Camden, [18] New Jersey, and the Edison companies of West Orange, New Jersey, have been and now are openly and notoriously using and selling phonograph horns substantially the same in all respects as the horns understood to be complained of herein; and that the parties aforesaid have continued to the present time thus to deal in the said horns as aforesaid, at all times to the full knowledge of this plaintiff and of the United States Horn Co. (from whom plaintiff is understood to derive its alleged title to the Nielsen Patent in suit) and without any protest or objection whatever on the part of the owner of said Nielsen Patent except as set forth below, to wit, (1) on or about February 10, 1906, said United States Horn Co. represented itself to said Hawthorne and Sheble concern as the owner of said Nielsen Patent, and asserted that said patent was being infringed by said Hawthorne and Sheble and by said Tea Tray Co. and by certain other manufacturers, and suggested that said alleged infringers should unite in acquiring said Nielsen Patent or rights thereunder; and that said Hawthorne and Sheble, after investigation, replied that said Nielsen Patent was invalid and of no force and effect in law, and that they would continue the manufacture and sale of the horns aforesaid without paying any further attention to said Nielsen Patent; and (2) that as early as May, 1906, said United State Horn Co. asserted to said Victor Talking Machine Co. that the former owned

said Nielsen Patent and that the latter was infringing the same, and demanded that said Victor Talking Machine Co. desist from the alleged infringements, and threatened patent suit in case of refusal; but that said Victor Co., after investigating said Nielsen Patent, paid no further attention to the same; and that thereafter to the present time said horn manufacturers have not been interfered with by this plaintiff or its supposed predecessor in title. [19]

## XVII.

That, in view of the long-continued course of dealing above set forth, and at all times well known to this plaintiff and its predecessor in title, defendant has long since been led to believe, and was justified in believing, that said Hawthorne and Sheble and said Tea Tray Co. had the perfect right to manufacture the horns aforesaid and to sell the same, and that this defendant had the perfect right to acquire and use and sell the same without interference by any patent owner, and that, relying upon the consistent conduct aforesaid of said United States Horn Co. and this plaintiff during all the period aforesaid, and their said acquiescence in the putting out of said horns, this defendant was induced to expend and did expend large sums of money in acquiring for the benefit of its customers the horns understood to be now complained of, and in delivering the same to them; and that said horns were so sold because of their attractive dress and appearance, and not because of superior acoustic quality. Wherefore, this defendant says that it is contrary to equity and

good conscience for complainant to maintain against it this suit in equity, or to obtain an injunction or an accounting or any other relief whatever.

Wherefore, and for the causes aforesaid, this defendant denies the equity of complainant's bill herein, and all manner of wrongful and unlawful acts wherewith in the said bill of complaint it is charged, and further, denies the right of the complainant to the relief, and each and every part thereof, alleged against this defendant in said bill of complaint, and submit it should not be compelled to make any other or further answer than that herein contained. [20]

All of which matter and things this defendant is ready and willing to aver, maintain and prove as this Honorable Court shall direct; and humbly prays to be hence dismissed with its reasonable costs and charges in this behalf most wrongfully sustained.

COLUMBIA GRAPHOPHONE COMPANY,

By GEO. W. LYLE.

Attest:

[Seal] C. W. WOODROP,

Secretary.

C. A. L. MASSIE,

Woolworth Bldg., N. Y. City,

Of Counsel for Defendant.

State of New York,

County of New York,—ss.:

George W. Lyle, being duly sworn, deposes and says, that he is of lawful age, is a resident of Hackensack, New Jersey, and is vice-president of the Columbia Graphophone Company, the defendant named in the bill of complaint herein; that he has



read the said answer subscribed by him as vice-president of the defendant company and knows the contents thereof; that the same are true of his own knowledge, except as to the matters stated to be alleged on information and belief, and as to those matters he believes it to be true.

GEO. W. LYLE,

Subscribed and sworn to before me, this 11th day of October, 1913.

[Seal]

RALPH L. SCOTT,  
Notary Public, New York County.

[Endorsed]: Filed October 20, 1913. Walter B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.  
[21]

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(Title of Court and Cause.)

**Notice of Motion to Amend Answer.**

To the Above-named Plaintiff and to John H. Miller,  
Esq., Solicitor, for Plaintiff:

Please take notice that on Monday, the 16th day of August, 1915, at the District Court of the United States, Northern District of California, Second Division, in the courtroom of said court, in the Post-office Building, in the city and county of San Francisco, State of California, at the hour of ten o'clock A. M. or as soon thereafter as counsel can be heard, the said defendant, Columbia Graphophone Company, will move for leave to amend the answer in accordance with the annexed motion.

Said motion will be based upon this notice and all the records, proceedings and files herein, the rules of

this Court, and the new Equity Rules.

Dated August 12, 1915.

CHAS. E. TOWNSEND,  
C. A. L. MASSIE,  
Solicitors for Defendant. [22]

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(Title of Court and Cause.)

**Motion to Amend Answer.**

Now comes the defendant in the above-entitled cause and moves this Honorable Court for leave to amend the Answer heretofore filed herein in the following particular, to wit:

On page 12, paragraph XV, by adding the following names and residences of the persons and parties having prior knowledge of the thing patented and of the alleged improvements described and claimed in Letters Patent No. 771,441 sued on:

Adolph Hammer, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

George Dimling, Jr., of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

Leo F. Ley, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

Anna Meyer, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

Charles E. Sutter, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

H. P. Keely, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

G. E. Sutter, of Bellevue, Pa., at Pittsburg, Pa., and elsewhere;

Alexander Hudson, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

Gustave Hammer, of Bellevue, Pa., at Pittsburg, Pa., and elsewhere;

Frank J. Kleber, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere; [23]

T. F. McCausland, of Pittsburg, Pa., at Pittsburg, Pa., and elsewhere;

D. S. Hartley, of Bellevue, Pa., at Pittsburg, Pa., and elsewhere;

said parties, and each of them, having knowledge of the use and having used said alleged invention of the patent sued on at the respective places mentioned and more than two years prior to the application for said Letters Patent No. 771,441.

That said amendment is material and necessary to a proper defense of the case and the matters set up by way of amendment were not known to defendant prior to filing the original answer.

Said motion is further made on the ground that the said amendment is made in line with the concluding paragraph of said paragraph XV of the original answer; and the further ground that the said amendment includes the names of those witnesses whose depositions have been taken in another cause pending in this court involving issues identical to those raised herein, and which depositions it has been stipulated, although taken in said other cause, could be used in the cause herein with like force and effect as though taken pursuant to notice herein; and upon the further ground that amendment is necessary to conform with the proofs of defendant; and upon the

further ground that justice requires the amendment as herein prayed and that it is in accordance with the rules of practice in this court that said pleadings should be so amended.

WHEREFORE defendant prays that said amendment be allowed and be considered as a part of the answer on the hearing of the cause.

Dated August 12, 1915.

CHAS. E. TOWNSEND,  
C. A. L. MASSIE,  
Solicitors for Defendant. [24]

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(Title of Court and Cause.)

**Affidavit of Charles E. Townsend.**

State of California,  
City and County of San Francisco,—ss.

Charles E. Townsend, being first duly sworn, deposes and says that he is one of the solicitors of the defendant in the above-entitled cause; that he knows that the statement of facts set out in the accompanying motion, and that the grounds specified for said motion, are true and correct; that said motion is further essential for the reason that the proofs heretofore taken and relied upon by defendant may conform with Section 4920 of the U. S. Revised Statutes; and that there is now on file in this court a stipulation between the parties in words as follows, to wit: [25]

(Title of Court and Cause.)

**Stipulation Regarding Admission of Evidence at  
the Trial.**

It is hereby stipulated and agreed by and between the parties to the above-entitled suit as follows:

1. That at the trial printed, uncertified copies of U. S. and foreign letters patent may be used in evidence with the same force and effect as the originals or as certified copies, and that the date of issuance appearing on the same respectively shall be deemed to be and taken as the actual date of issuance thereof, and subject, however, to correction in case of error found.

2. That certified copies of assignments constituting plaintiff's chain of title, duly certified by a Commissioner of Patents of the United States, may be used in evidence with same force and effect as the originals subject to correction in case of error found.

3. That subject to any objection that may be made as to incompetency, irrelevancy, immateriality or other grounds of inadmissibility, either party may offer in evidence at the trial as part of its record in this case any or all depositions, exhibits, testimony or other evidence offered by either party in the Equity Suit No. 15,623, of this plaintiff against Sherman, Clay & Company, now pending in the District Court of the United States for the Northern District of California, Second Division, or in the Equity Suit, No. 18, of this plaintiff against the Pacific Phonograph Company now pending in the



same court, or in Equity Suit No. 394 of this plaintiff against the Victor Talking Machine Company now pending in the United States District Court for the District of New Jersey, and the same when so offered and received in evidence [26] in this case shall constitute and be part and portion of the proofs, exhibits, testimony and evidence of the party so offering the same herein, with the same force and effect as if the same had been originally taken and offered in the case at bar.

4. That within six years prior to the commencement of this suit in the Northern District of California and elsewhere in the United States, defendant sold horns for phonographs or graphophones similar in all respects to the two horns referred to in the affidavit of W. H. Locke, Jr., on motion for preliminary injunction and stated in said affidavit to have been purchased by him on October 4, 1913, from Columbia Graphophone Company at New York City; and that within six years prior to the commencement of this suit defendant issued and circulated catalogues entitled: "Columbia Graphophones" M-250 of which a copy is hereunto annexed, and showing at pages 11, 13, 15, 21, 35, 37, 39 and 41 cuts and illustrations of horns sold by defendant.

5. It is also stipulated and agreed that at all the times mentioned in the Bill of Complaint, the United States Horn Company and plaintiff were and are corporations created under the laws of the State of New York and that the defendant was and is a corporation created and existing under the laws of the State of West Virginia.



Dated this 10th day of June, 1915.

JOHN H. MILLER,

Solicitor for Plaintiff.

C. A. L. MASSIE,

CHAS. E. TOWNSEND,

Solicitors for Defendant.

So ordered:

\_\_\_\_\_ ,

Judge.

Further deponent saith not.

CHAS. E. TOWNSEND.

Subscribed and sworn to before me this 13th day of August, 1915.

[Seal]

W. W. HEALEY,

Notary Public in and for the City and County of  
San Francisco, State of California. [27]

Copy of the within Notice and Motion to Amend Answer and Affidavit of Chas. E. Townsend, left with office of J. H. Miller, Atty. for Plaintiff this 13th day of August, A. D. 1915.

CHAS. E. TOWNSEND,

For Defendant.

[Endorsed]: Filed Aug. 13, 1915. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [28]

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(Title of Court and Cause.)

**Stipulation and Order Extending Time to Take  
Depositions.**

WHEREAS, in the Circuit Court of Appeals of the United States, appeals are now pending in three suits brought by this same plaintiff against other

parties for the alleged infringement of the same patent that is involved herein, which said appeals have been argued and submitted and are likely to be decided at the February, 1914, term of the said court; and

WHEREAS, the decisions in said cases may have some influence in the matter of taking testimony herein, and the parties have mutually agreed to extend the time allowed by law for taking depositions under the Revised Statutes until after decisions of said appeals;

NOW, THEREFORE, it is stipulated and agreed by and between the parties hereto as follows:

1. That the plaintiff shall have until and including February 28, 1914, in which to take depositions under Sections 863, 864 and 865 of the United States Revised Statutes.

2. That the defendant shall have until and including April 10, 1914, in which to take depositions under said sections.

3. That plaintiff shall have until and including May 10, 1914, in which to take rebuttal depositions under said sections.

Provided that if the said Circuit Court of Appeals shall not have decided *that* said appeals. as anticipated, at said February, 1914, term of said court, then and in that event each of the times hereinabove provided shall be respectively and correspondingly extended thirty (30) days each; and if at the end of the thirty (30) days thus further allowed defendant, said decisions [29] are not yet forthcoming, there shall be a further extension of the times of the re-

spective parties of a like period and so on, and a reasonable time shall in any event be allowed each party to take depositions after the rendering of said decisions.

It is understood and agreed that this stipulation refers to the taking of depositions for final hearing and is without prejudice to the right of the plaintiff to move for a preliminary injunction in said suit, and in case such motion is made this stipulation shall not be used by defendant against plaintiff in opposition to said motion.

MILLER & WHITE,  
Attorneys for Plaintiff.

C. A. L. MASSIE,  
By CHAS. E. TOWNSEND,  
Attorney for Defendant.

Dated January 6, 1914.

So ordered:

WM. C. VAN FLEET,  
Judge.

[Endorsed]: Filed Jan. 9, 1914. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [30]

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(Title of Court and Cause.)

**Stipulation and Order Extending Time to Take  
Testimony.**

In accordance with the Stipulation of January 6, 1914, there having been no Opinion yet rendered by the Circuit Court of Appeals in the cases therein referred to, it is hereby stipulated and agreed that the defendant shall have until and including May 10,

1914, in which to take depositions, and plaintiff shall have until and including June 10, 1914, in which to take rebuttal depositions.

Dated April 9, 1914.

MILLER & WHITE,  
Attorneys for Plaintiff.  
C. A. L. MASSIE,  
By CHAS. E. TOWNSEND,  
Attorney for Defendant.

So ordered:

M. T. DOOLING,  
Judge.

[Endorsed]: Filed April 13, 1914. Walter B. Maling, Clerk. [31]

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(Title of Court and Cause.)

**Stipulation and Order Extending Time [to May 10, 1914] to Take Depositions, etc.**

In accordance with the Stipulation of January 6, 1914, and the recent rendition of the opinions by the Circuit Court of Appeals in the cases therein referred to, it is hereby stipulated and agreed that the defendant shall have until and including June 10, 1914, in which to take depositions, and plaintiff shall have until and including July 10, 1914, in which to take rebuttal depositions, without prejudice to plaintiff's right to move for a preliminary injunction.

Dated May 11th, 1914.

MILLER & WHITE,  
Attorneys for Plaintiff.  
C. A. L. MASSIE,  
CHAS. E. TOWNSEND,  
Attorneys for Defendant.

So ordered:

WM. C. VAN FLEET,  
Judge.

[Endorsed]: Filed May 14, 1914. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [32]

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(Title of Court and Cause.)

**Stipulation Extending Time [to June 10, 1914], for  
Taking Depositions by Defendant and Plaintiff.**

In accordance with the Stipulation of January 6, 1914, and the recent rendition of the opinions by the Circuit Court of Appeals in the cases therein referred to, it is hereby stipulated and agreed that the defendant shall have until and including July 10, 1914, in which to take depositions, and plaintiff shall have until and including August 10, 1914, in which to take rebuttal depositions.

Dated May 29th, 1914.

MILLER & WHITE,  
Attorneys for Plaintiff.  
C. A. L. MASSIE,  
By CHAS. E. TOWNSEND,  
Attorneys for Defendant.

So ordered:

WM. C. VAN FLEET,  
Judge.

[Endorsed]: Filed Jun. 9, 1914. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [33]

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(Title of Court and Cause.)

**Stipulation Extending Time [to July 10, 1914] for  
Taking Depositions, etc.**

In accordance with the stipulation of January 6, 1914, and in view of the recent rendition of the opinions by the Circuit Court of Appeals in the cases therein referred to, it is hereby stipulated and agreed that the defendant shall have until and including September 1st, 1914, in which to take depositions, and plaintiff shall have until and including October 1st, 1914, in which to take rebuttal depositions. This stipulation is without prejudice to plaintiff's right to move for a preliminary injunction.

Dated San Francisco, June 24, 1914.

MILLER & WHITE,

Attorneys for Plaintiff.

C. A. L. MASSIE,

CHAS. E. TOWNSEND,

Attorneys for Defendant.

So ordered:

WM. C. VAN FLEET,

Judge.

[Endorsed]: Filed Jun. 25, 1914. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [34]



**[Stipulation and Order Extending Time to September 1, 1914, to Take Depositions, etc.]**

(Title of Court and Cause.)

To C. A. L. Massey, Solicitor for Defendant:

TAKE NOTICE that on July 27, 1914, at the hour of 10 o'clock A. M., or as soon thereafter as counsel can be heard, plaintiff in the above-entitled suit will move this Court at the courtroom thereof in the city and county of San Francisco, State of California, for an order granting to plaintiff a preliminary injunction, enjoining and restraining defendant, its officers, agents, servants, employees, and all others acting in privity with the defendant, until the final hearing, from making, using, or selling, or offering, or advertising, or threatening to make, use or sell, any horn or horns for phonographs, either attached to and connected therewith, or separate and disconnected from any phonograph, or other instrument, containing and embodying the invention described in the specification of U. S. letters patent No. 771,441, and claimed in and by claims two and three thereof, and from infringing upon said claims or either of them, in any manner whatever, and from aiding or abetting or contributing to any such infringement, and particularly from making, using, or selling, or offering, or advertising, or threatening to make, use or sell, any horn or horns for phonographs such as those heretofore and now being sold, advertised and offered for sale and dealt in by defendant, in connection with or as a part of, or appurtenant to the phonographs or graphophones sold and dealt in by de-

fendant and styled respectively, the "Bijou" (type B. Z.), the "Improved Champion" (Type B. N.), and the "Improved Royal" (type B. N. W.) The said horns referred to being commonly known as "Flower" [35] horns, and consisting of metal strips joined together at their edges by a seam so as to provide ribs on the outside of the horn, and being tapered from the inner to the outer end and made in a bell shape.

Upon the hearing of the motion plaintiff will use, read and rely upon the affidavits of W. H. Locke, Jr., Baldwin Vale, and John H. Miller, hereunto annexed, together with the papers and pleadings now on file in the case, a copy of patent number 771,441, the phonograph horns referred to in the said affidavit of W. H. Locke, Jr., the phonograph horns referred to in the affidavit of Baldwin Vale, two catalogues of the defendant company, the papers and pleadings on file in the case of Searchlight Horn Company vs. Sherman, Clay & Company, No. 15,326, in this court; the papers and pleadings on file in the case of Sherman, Clay & Company, vs. Pacific Phonograph Company No. 18, in this case; the papers and pleadings on file in the case of Searchlight Horn Company vs. Sherman, Clay & Company, No. 15,623, in this court, together with such other and further papers, evidence and data as may be produced at the hearing.

The ground for the above motion is that claims two and three of said patent No. 771,441, have heretofore been sustained and held valid in the aforesaid action at law of Searchlight Horn Company vs. Sherman, Clay & Company, No. 15,326, and that the judgment

in said suit has been affirmed by the Circuit Court of Appeals for the Ninth Circuit, and that in the other two cases referred to, preliminary injunctions have been granted by this court, and orders granting the same have been affirmed by the said Circuit Court of Appeals, and that the issuance of a preliminary injunction herein is necessary and proper under the rules of practice of this court; and that unless the same is granted, plaintiff will suffer great and irreparable loss and [36] injury, for which there is no plain, speedy, or adequate remedy at law.

JOHN H. MILLER,

WM. K. WHITE,

Attorneys for Plaintiff, Crocker Building, San Francisco, Cal. [37]

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(Title of Court and Cause.)

**Affidavit of William H. Locke, Jr., on Motion for Preliminary Injunction.**

State of Pennsylvania,  
County of Alleghany,—ss.

William H. Locke, Jr., being first duly sworn, deposes and says:

I am president of the Searchlight Horn Company, plaintiff in the above-entitled suit. Said company is the owner and holder of the Nielsen Patent, No. 771,441, involved in said suit and for infringement of which said suit was brought.

I became interested in the business of phonographic horns on or about January, 1904, and ever since then have been connected either directly or in-

directly with said business and am familiar with the same and also with the state of the art as it existed at that time and as it has since been developed.

Up to the year 1907, horns were not made a part of the equipment of the phonograph companies, but were manufactured by other parties and supplied by them to the jobbers of phonographs. In other words, the phonograph companies made and sold to the jobbers the phonographs themselves and the horn manufacturers made the horns for such phonographs and sold said horns to said jobbers after which the jobbers sold both the horns and phonographs to the dealers, who in turn sold them to the users. This state of the business continued up to some time in or about the year 1907. Prior thereto the Searchlight Horn Company was a manufacturer of phonograph horns containing the Nielsen invention and made and sold said horns to jobbers in the manner above stated. Said company had invested a large sum of money in said business and had [38] built up quite an extensive business throughout the United States selling its horns for use on phonographs of the National Phonograph Company, the Victor Talking Machine Company, the Columbia Phonograph Company, General, as well as others. There was a large call for horns at that time, and the business of manufacturing and selling horns gave promise of being profitable, and the Searchlight Horn Company invested about thirty-five thousand dollars in the same. But sometime in the year 1907, or thereabouts, the various phonograph companies throughout the United States concluded to make and did make the horns a part of

their equipment, and from that time on sold and do now sell the horns with the phonographs, thereby making it unprofitable for individual horn manufacturers to continue in the business as theretofore. In this way the sale of horns became a monopoly with the phonograph companies, and the Searchlight Horn Company could no longer continue its business of manufacturing and selling horns with profit for the reason that the jobbers were compelled to get the horns, together with the phonographs, from the phonograph companies. This forced the Searchlight Company to discontinue the actual manufacture of its horns in May, 1908, and since said time the Searchlight Horn Company has not been able to make or sell any of its horns though retaining the ownership of its patents, the reason being that the phonograph companies absorbed the business of manufacturing and selling horns. The horns made and sold by the phonograph companies thereafter were largely horns containing the invention of the Nielsen patent and were and still are known to the trade as "Flower" horns, the name originally adopted and applied by the patentee Nielsen to his patented horns.

When the Searchlight Horn Company discontinued its business in May, 1908, it endeavored through a long course of negotiations with the various phonograph companies, including the defendant [39] herein, to make arrangements for the payment to the Searchlight Horn Company of a royalty for the use of the Nielsen invention, and failing in that, for a purchase of the Nielsen Patent, having already notified the said phonograph companies that the



“Flower” horns which they were making and selling were infringements of the Nielsen Patent. The Searchlight Horn Company subsequently endeavored to sell and offered for sale the Nielsen patent to the Columbia Phonograph Company, General. These negotiations were carried on for a long period of time, but without success, and the Columbia Phonograph Company, General, finally at the conclusion of said negotiations, in the latter part of 1909, declined to make any arrangement for the purchase of the said patent or payment of royalty.

The Searchlight Horn Company then realized that it would be necessary to begin legal proceedings against the infringers of the Nielsen Patent, and, as president of the Searchlight Horn Company, I interviewed a number of lawyers and endeavored to secure the services of a competent one for the purpose of instituting and prosecuting infringement suits on the Nielsen Patent, but by reason of the fact that the Searchlight Horn Company had failed to meet its obligations and was in financial distress, I was not able for a long time to secure a competent attorney who would be willing to undertake the litigation until in April, 1910, when Mr. John H. Miller, an attorney of San Francisco, was introduced to me by a mutual friend. He stated that he would make an investigation and if after such investigation he was of the opinion that the Searchlight Horn Company had a good case he would undertake the same. He did make such investigation extending over a considerable period of time during which he witnessed actual demonstrations and experiments of various styles of



horns in New York and when he returned to San Francisco he commenced [40] a suit on behalf of the Searchlight Horn Company in May, 1911, against Sherman, Clay & Company, the Pacific Coast distributors of the Victor Talking Machine Co. That suit was in the nature of a test suit for the purpose of ascertaining whether said Nielsen Patent was valid and had been infringed, and other litigation was allowed to await the determination of that case. The Sherman, Clay and Company case was tried in open court in San Francisco in October, 1912, and resulted in a judgment in favor of the Searchlight Horn Company, sustaining the validity of the Nielsen Patent and awarding damages for its infringement. I was present at the trial of the said case and testified on behalf of the Searchlight Horn Company; after the entry of the said judgment, a motion was made for a new trial in that case, and also the Searchlight Horn Company commenced a suit in equity against Sherman, Clay and Company and asked for a preliminary injunction. I am informed and the said motion for a new trial has been denied, and the motion for preliminary injunction has been granted and an appeal taken.

I am informed that the defendant company is daily supplying and selling to others on the Pacific Coast the "Flower" horns in connection with the Columbia phonographs and in carrying on an active business therein, and that said horns are of the same construction and mode of operation as the flower horns which in the Sherman, Clay & Company case were held to be infringements of the Nielsen Patent. I know of my

own knowledge that the defendant is now extensively selling at New York phonograph horns containing the invention of the Nielsen Patent and being of the same construction as the horns involved in the suit against Sherman, Clay & Company, Pacific Phonograph Co. and Babson Brothers and therein adjudged to be infringements on claims 2 and 3 of said Nielsen Patent. On October 4, 1913, I visited the storeroom of the defendant [41] on 23d Street in New York City, and purchased from them one of such horns, and the same will be produced at the hearing of the motion for a preliminary injunction. I have marked on the same these words: "Horn purchased by W. H. Locke, Jr., on October 4, 1913, from Columbia Graphophone Co., 35-37 West 23d Street, New York City." On the same day I purchased another horn of the same construction, but of different color, from the defendant at its store on 125th Street, New York City. At that time defendant had on hand other horns of the same construction which it was offering for sale in connection with its phonographs or some of them.

If the defendant is allowed to continue this course of action pending the suit, the Searchlight Horn Company will be subjected to great and irreparable injury for which in my opinion there is no plain, speedy or adequate remedy at law, and in my judgment a preliminary injunction is the only adequate protection which the Searchlight Horn Company can obtain. I am led to believe and am so informed by my attorney that this litigation is liable to be long continued and expensive, and that in the ordinary

course of affairs attending the trial of equity cases it is uncertain when the case can be brought on for final hearing and that it will probably be necessary for both sides to take depositions at various places in the United States outside of the Pacific Coast, and even if a decree is rendered in favor of plaintiff, defendant will be entitled to take an appeal therefrom, and by giving a bond probably would further postpone until an indefinite time the final determination of the suit, whereas if a preliminary injunction is granted at this time the defendant will either be compelled to cease its infringement and leave the market to be supplied by the plaintiff or else will be compelled to obtain its horns from the plaintiff or someone authorized by the plaintiff to manufacture under the Nielsen Patent. The plaintiff is and would be willing to cause to be supplied to the defendant horns made under the [42] Nielsen Patent at a reasonable price or would allow defendant to make and sell such horns for a small royalty whereby defendant would be enabled to continue its business without serious hindrance or damage.

Furthermore, there has not been at any time any fixed or established royalty for the manufacture or sale of the horns covered by the Nielsen Patent, and it is probable that on an accounting plaintiff would not be able to prove its damages by such evidence as would be sufficient to clearly establish the same and would probably be compelled to rely upon a recovery of the defendant's profits which would involve a long, difficult and intricate proceeding. Under all these circumstances, I think that a preliminary injunction

is the only effectual remedy open to the Searchlight Horn Company whereby its rights can be protected. The validity of its patent has already been sustained by a verdict of a jury in this court and a motion for a new trial has been denied by the Court. Furthermore, I am informed that a preliminary injunction has been granted by this Court against Sherman, Clay & Company, distributors of the horns of the Victor Talking Machine Company and against Pacific Phonograph Co., distributors of Edison horns on the Pacific Coast, and under all these circumstances I submit that the Searchlight Horn Company is equitably entitled to a preliminary injunction against Columbia Graphophone Company, and other parties who are infringing upon this patent on the Pacific Coast.

The reason why suit has not heretofore been brought against the defendant and motion for an injunction made was because of lack of financial means on the part of the plaintiff and its inability to secure the services of a proper and competent attorney until the spring of 1910, but the Searchlight Horn Company has at all times asserted its rights under the Nielsen Patent and its intention to prosecute infringers, and has taken [43] all means in its power to give publicity thereto, and all manufacturers and dealers in talking machines including the defendant herein have at all times been aware of the plaintiff's position in the matter. In the year 1906 plaintiff notified the Victor Talking Machine Co. of Camden, N. J., the Tea Tray Company of Newark, N. J., National Phonograph Company of Orange, N. J., Haw-

thorne & Shebly Mfg. Co., and the defendant herein, who was then known as the Columbia Phonograph Company, General, that they were infringing upon said letters patent and requested that they discontinue the same. In order to make assurance doubly sure and for fear that some persons affected might not have been notified of the rights of the plaintiff, said plaintiff, in November, 1906, caused to be printed a circular notice of which a copy is hereunto annexed and marked exhibit "A" and mailed said circulars and notice generally to all persons whom they knew of who were engaged in the business of making and selling phonographs and phonographic supplies throughout the United States, amongst other persons to whom said circulars were sent was the Hawthorne & Shebly Manufacturing Company and the defendant herein.

WILLIAM H. LOCKE, Jr.

Subscribed and sworn to before me this 19th day of December, 1913.

[Seal]

WILLIAM R. JOHNSTON,

Notary Public.

My Commission expires March 10, 1917.

No. 1510.

Allegheny County,  
State of Pennsylvania,—ss.

I, Wm. B. Kirker, Prothonotary of the Court of Common Pleas No. 1, in and for the county of Allegheny, in the Commonwealth of Pennsylvania, the same being a court of law and record and having a seal, do hereby certify that William R. Johnston,



Esquire, before whom the foregoing affidavit was taken, and who has [44] thereunto, in his own proper handwriting, subscribed his name, to the certificate of the proof or acknowledgment of the annexed instrument, was at that time and is now a notary public in and for the Commonwealth of Pennsylvania, resident of said county aforesaid, duly commissioned and sworn and authorized by law to take and certify affidavits and the acknowledgments and proof of deeds of land, etc., to be recorded, to all whose acts as such due faith and credit are, and of right ought to be, given throughout the United States and elsewhere; and further, that said instrument is executed in accordance with the laws of this Commonwealth, and that I am acquainted with his signature, and believe the same to be genuine.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the said court, at Pittsburgh, in said county, this 19 day of Dec., in the year of our Lord one thousand nine hundred and thirteen.

[Seal]

WM. B. KIRKER,  
Prothonotary. [45]



**Exhibit "A" [to Affidavit of Wm. H. Locke, Jr., on  
Motion for Preliminary Injunction].**

**SEARCHLIGHT HORN COMPANY,  
MANUFACTURERS OF  
THE MARVELOUS SEARCHLIGHT  
HORNS.**

Telephone 2606 Bushwick.

753-755 Lexington Avenue,  
Brooklyn, N. Y., November 15th, 1906.

Dear Sirs:—

Becoming alarmed at the rapidity with which our "Searchlight Horns" have gained the favor of the public, our competitors have in an unbusiness-like manner attempted to intimidate our customers.

We therefore notify you that the Searchlight horn is protected by United States Letters Patent No. 771,441, of October 4, 1904, and No. 12,442 of Jan. 30, 1906.

Among other claims, said patents contain the following: A phonograph horn or the like comprising a number of flexed strips having curved meeting edges and means joining said edges, said strips being so flexed and said edges so curved and joined that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges meet.

A horn for phonographs and similar instruments, said horn being large at one end than at the other and tapered in the usual manner, said horn being composed of longitudinally arranged strips secured together at their edges and the outer side thereof at the

points where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.

All of the so-called "Flower Horns" made by our aforesaid competitors are flagrant infringements of said patents.

The "Searchlight Horn" is further protected by United States patent No. 38,275, of October 9th, 1906; and other patents covering said horn will issue in due course.

If after the knowledge of these facts you consider it prudent to buy "Flower Horns" other than the "Searchlight" do not hold us blameworthy if trouble ensues, as we have been obliged to place the patents in the hands of our attorney with instructions to take steps to protect our rights thereunder; and remember, please, that we make the best horn in the market and sell it at a fair price.

Very truly yours,

SEARCHLIGHT HORN COMPANY. [46]

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(Title of Court and Cause.)

**Affidavit of Baldwin Vale on Behalf of Plaintiff and  
Motion for Preliminary Injunction.**

State of California,

City and County of San Francisco,—ss.

Baldwin Vale, being duly sworn, deposes and says, I am a solicitor of patents and a mechanical expert in patent cases and testified on behalf of the plaintiff in the case of Searchlight Horn Company vs. Sherman, Clay & Company, heretofore tried in this court.

Some months ago under employment from plaintiff's attorney, I visited the offices and salesroom of the Columbia Graphophone Company, defendant herein, situated at 334 Sutter Street in the city and county of San Francisco, and inquired for and endeavored to purchase a Columbia phonograph of the type designated by that company as the "Bijou" and sometimes as the type "B. Z." I was informed by defendant's agent that their stock of horn machines was depleted and that they did not at that time have the "Bijou" machine in stock, but suggested that I might obtain one from the firm of Unti & Perrasso, of 342 Columbus Avenue, San Francisco. Defendant's agent gave me one of their catalogues at the time stated entitled "Columbia Disc Graphophone and Grafonola" which I herewith file in court as a part of my affidavit. On pages 8 and 9 thereof will be seen an illustration and description of the aforesaid "Bijou" machine, and in said description I found the following relating to the horn:

"The Floral Horn is 18- $\frac{3}{4}$  inches long and 16 inches across the bell—finished in red shaded enamel with gold markings, etc." [47]

Thereupon I visited the store of Unti & Perrasso at 342 Columbus Avenue, and there saw on exhibition a "Bijou" machine of the type referred to marked as a product of the Columbia Graphophone Company. I did not at that time purchase the same, but afterwards on June 19, 1914, in company with the plaintiff's attorney, Mr. John H. Miller, I visited the store of Unti & Perrasso at 342 Columbus Avenue, San Francisco, and there saw on exhibition and exposed

for sale several types and makes of phonographs provided with horns. One of these was a "Bijou" machine provided with a flower horn  $18\frac{3}{4}$  inches long and 16 inches across the bell finished in red shaded enamel with gold markings and made of longitudinal strips of metal joined together at their edges by seams constituting ribs. Plaintiff's attorney thereupon purchased the said "Bijou" machine for the price of \$17.50 and I detached the horn from the same, carried it to the office of plaintiff's attorney, and scratched upon the same the following:

"June 19, 1914, Baldwin Vale"

at the same time instructing Unti & Perrasso to deliver the remaining parts of the graphophone at the office of plaintiff's attorney. At the time of purchasing said machine Unti & Perrasso stated that the machine was a product of the Columbia Graphophone Company from whom they had recently purchased the machine and that they were agents for the sale of the Columbia Graphophone of which this particular machine was a sample.

I herewith produce and file with the clerk the aforesaid horn which I identify as the one which was purchased from Unti & Perrasso at the time and under the circumstances above stated. The said horn bears all the mechanical characteristics of the horns which were adjudged to infringe plaintiff's patent in the case of Sherman, Clay & Company, wherein I testified as an expert witness for the plaintiff. [48]

In addition to the foregoing I desire to add the following:

On July 6, 1914, at the request of plaintiff's attorney, I visited the office and salesroom of the defendant at 334 Sutter Street, San Francisco, for the purpose of ascertaining if the Company was still engaged in selling the infringing horns.

The defendant's representative in charge who waited on me, stated that at that particular time their stock of "Bijou" or "B. Z." type of graphophones had been depleted by being sold out, but he did not deny that that particular style of machine had theretofore been sold by the defendant at San Francisco, nor that it would not hereafter be sold, and suggested that I might get one from Unti & Perrasso, saying that that type of machine was sold only to Italians and Portuguese, and that Unti & Perrasso were the principal customers of defendant for said machines, but, at the same time, he showed me another type of graphophone called the "Improved Champion" known as the type "B. N." which said machine the company was engaged in selling at San Francisco, and which sold best to the Chinese, because it gave a louder tone than was possible with the other types, and the Chinese preferred such loud tones.

I was taken into the stockroom to see the "Improved Champion" and I there saw many of them in stock. While there my attention was also called to a "Bijou" or type "B. Z." horn for identification which I there saw. I also saw a large number of other horns of various and sundry descriptions, nearly all of them being made of metal and containing the infringing characteristics of the Nielsen horn, and there were also some wooden horns in stock



which did not contain the aforesaid characteristics.

The said "Improved Champion" machine is represented on page 25 of the Columbia catalogue which I have examined and which I understand is to be filed with the papers in this case. The said "Improved Champion" machine contains a metal horn with gold stripes [49] along the ribs, and contains all of the infringing characteristics of the Nielsen horn, even in a more pronounced degree than the "Bijou" or type "B. Z." horn. I have examined carefully one of these "Improved Champion" horns and understand that the same is to be filed with the papers in this case, from which the Court can readily understand the construction.

BALDWIN VALE.

Subscribed and sworn to before me this 10th day of July, 1914.

[Seal]                      GENEVIEVE S. DONELIN,  
Notary Public in and for the City and County of San  
Francisco, State of California.      [50]

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(Title of Court and Cause.)

**Affidavit of John H. Miller on Behalf of Plaintiff  
on Motion for Preliminary Injunction.**

State of California,  
City and County of San Francisco,—ss.

John H. Miller, being duly sworn, deposes and says, I am attorney for the plaintiff and the reason why motion for preliminary injunction in this case has not heretofore been made, would be apparent from the following facts:



When I was employed by the defendant I did not deem it advisable to begin a multiplicity of suits against a multiplicity of persons before the patent had been sustained and consequently on May 9th, 1911, I began a test case in this court against Sherman, Clay & Company. Judgment in that case was rendered on October 4, 1912. A petition for a new trial was denied on April 12, 1913.

On May 23d, 1913, a Writ of Error was sued out by defendant, and on May 4, 1914, judgment was affirmed by the Circuit Court of Appeals.

On June 8, 1914, a Mandate was filed in this court. In the meanwhile, on March 11, 1913, I had notified defendant herein, in writing, of its infringement, and of plaintiff's intention to bring suit unless settlement was made, stating that if I did not hear from them within a reasonable time, my instructions were to commence suit.

On March 19, 1913, in answer to my letter, Messrs. Mauro, Cameron, Lewis & Massie, Patent attorneys of New York City, wrote me stating that they were the attorneys for the defendant, and in that letter they denied the validity of the patent, [51] and suggested that they had in their possession certain evidence which would invalidate the patent.

In answer to this letter I wrote them under date of March 25, 1913, stating that if they would furnish me with the details of the anticipating evidence referred to, I would delay suit temporarily so as to investigate same, and if I found it to be as they stated, no suit would be brought against their client.

In answer to this letter they wrote me under date

of March 31, 1913, that they were collecting the data constituting the details of the evidence referred to above, and that as soon as it was collected they would transmit this material to me within a very short time.

I waited until June 12, 1913, nearly two and a half months, without hearing from them, and thereupon, on June 12, 1913, I wrote them reminding them of their promise, and requesting that they would hurry up the matter.

In answer to this letter they wrote me under date of June 17, 1913, that some of the evidence referred to by them, had been turned over to Mr. Louis Hicks, a patent attorney of New York City, to be used by him in opposition to a motion for a preliminary injunction which I had made in the suit against the Pacific Phonograph Company, in this court, and that the remainder of the evidence consisted of a horn then in their possession, which had been publicly used during the years 1898, 1899, 1900 and 1901, which they considered to be an anticipation.

In answer to this letter I wrote them under date of June 24, 1913, that I was familiar with the data which had been given to Mr. Hicks, and as to the anticipating horn claimed to be in their possession, that Mr. Hicks had produced in the court a photograph of it, in the case against the Phonograph Company, and that I did not consider said evidence sufficient to invalidate our patent; [52] and I further informed them in said letter, that the motion for preliminary injunction in the Pacific Phonograph case, had been granted, notwithstanding the aforesaid evidence, and that under the circumstances, nothing remained for

me to do in respect to the defendant herein, except to file suit, and that unless I heard from them within a reasonable time, I should pursue that course.

In answer to this letter they wrote me under date of June 30, 1913, as follows:

“We have yours of the 24th inst. and note that on the same date (June 24th) the Court in California granted preliminary injunction against Mr. Hicks’ clients, holding that the showing made was insufficient. Your letter reached us during the absence of Mr. Easton, President of our client, who has started abroad on a short business trip. We expect Mr. Easton to return about the middle or latter part of August.

Without in the least degree altering our opinion regarding the invalidity of the Nielsen Patent, it would seem that there are only two courses open to us, viz., either to make an amicable settlement with your client, or to prepare our papers with a view to taking a prompt appeal as soon as the preliminary injunction shall have been granted against us as a matter of course. During Mr. Easton’s absence, there is no one empowered to conclude negotiations in a matter of this sort; although (insisting, as before, upon the invalidity of your patent) we might be able to open negotiations in case your clients are willing to consider settlement out of court.”

In answer to this letter I wrote them under date of July 11, 1913:

“Replying to your favor of June 30th, I beg to say that I have sent a copy of same to Mr. W. H. Locke, Jr., President of the Searchlight Horn Co., whose address is #38 West Thirty-Second Street, New York. I have requested him to take up with you the matter of settlement. Mr. Locke has communicated with you on the subject and asked for an early appointment.”

Thereupon, as I am informed by Mr. Locke, negotiations for settlement were carried on at New York between Mr. Locke and the representatives of the defendant, and in further anticipation of the situation, I wrote defendant's attorneys under date of July 22, 1913, as follows: [53]

“As you have heretofore been advised, the matter of negotiations for settlement of this matter are now in the hands of our client, Mr. W. H. Locke, Jr., of 38 West 32 Street, New York City. It is probable that these negotiations may consume more time than we had anticipated, and in the meantime the statute of limitations is running daily against our claims. Under these circumstances I have concluded to file a bill against your client, the Columbia Graphophone Company in the United States District Court here, merely for the purpose of stopping the running of the statute of limitations. After the suit is filed, I will give you a stipulation extending your time to appear until after the termination of our negotiations, and if these negotiations eventuate in a successful result, then I will dismiss the suit without costs to you. If, on the

other hand, the negotiations fail of result, then I shall expect you to appear in the suit and make defense with the understanding, however, that I will grant you reasonable extensions of time, to enable you to answer or to take such other steps in the matter as you may be advised."

In pursuance of the foregoing letter, a bill in this case was filed on July 24, 1913.

Thereafter, I received from the aforesaid attorneys a letter dated July 28, 1913, in which they say:

"We assure you that we have no wish to be sued, especially out in California. But, if we have to be sued, we are glad to perceive that we will have a courteous and considerate adversary.

In your previous letter you advised us that Mr. Locke, of New York City, would take the matter up with us for discussion. During the temporary absence in Washington of the writer (Mr. Massie) Mr. Locke had an interview with the Vice-president and General Manager of the Columbia Company, Mr. George W. Lyle (the President, Mr. Easton not yet having returned from abroad). Mr. Lyle reports that Mr. Locke stated to him that he (Mr. Locke) was not in a position to state what terms would be satisfactory for the future proceedings; and referred Mr. Lyle to yourself.

We had assumed that Mr. Locke would be in position to negotiate with our representative, and that upon Mr. Easton's return he and Mr. Locke could conclude matters, if they desired to do so. Until we can learn what arrangements (if any)



can be secured for the future, we are of course not in position to negotiate concerning the past.

Will you, therefore, either communicate directly with us, or advise Mr. Locke to communicate with our Mr. Lyle, stating what terms can be secured for the continued operations of the Columbia Company (and also what basis of settlement can be made for past operations) ?”

And on the next day I received from said attorneys, a letter dated July 29, 1913, acknowledging receipt of an attested copy of subpoena [54] in the suit in which they used the following language:

“Pursuant to the offer in your letter to my firm of the 22nd inst., I am transmitting herewith an original and two carbons of a proposed stipulation. My idea in formulating the stipulation is that, upon receipt of notification from you that we must go ahead with the defense, it would require us several days to prepare the Answer or other pleading, and would require five or six days additional for it to reach San Francisco. Although the mere preparation of the Answer might not require more than one or two days, yet we might be engaged in other equally urgent matters, and might not be able to take the case up for a few days; and we might have to wait a few days in order to obtain the signature of the proper officer of the Columbia Co.

If the proposed stipulation meets your approval, will you please sign and file it and also



sign one of the enclosed carbons and return it to me?

Will you also please send me copy of the Bill of Complaint?"

The stipulation referred to in the foregoing letter, reads as follows:

"It appearing that negotiations are now pending between the above-entitled parties, looking to an amicable settlement of this controversy out of court, it is now stipulated by and between counsel for the above-named complainant and counsel for the above-named defendant Columbia Graphophone Company (appearing specially for the purpose of this stipulation) that the time for the said defendant to appear and file its Answer or other defense or to take such other steps herein as it may desire, is hereby extended until two weeks subsequent to the receipt by defendant's counsel, in New York City, of a notification from complainant's counsel to proceed in the defense."

This stipulation was signed by counsel for the respective parties and filed in court.

Thereafter, I personally went to New York for the purpose, among other things, of endeavoring to effect a settlement, and while there carried on negotiations with the defendant's attorney, Mr. C. A. L. Massie, and also with an officer of the defendant company, which negotiations continued up to October 6, 1913, at which time they were abandoned because of our inability to agree on terms, and thereupon I wrote

to defendant's attorneys under date of October 6, 1913, as follows: [55]

"In view of the failure to come to an agreement in the matter of the claim of the Searchlight Horn Company against Columbia Graphophone Company, for infringement of the Nielsen patent on horns for phonographs, you may consider this as a notice pursuant to our stipulation for you to prepare and file your answer in the suit. You have two weeks from today."

Thereafter, enclosed in a letter dated October 11, 1913, Mr. Massie sent me a copy of defendant's Answer, saying, among other things:

"As the testimony on behalf of my client the Columbia Graphophone Co. would be in large part a repetition of the testimony taken by Mr. Hicks on behalf of the Pacific Phonograph Co., and as the effect of much of that testimony is to be passed upon by the Court of Appeals on the hearings set for the 30th inst., and a few days later,—it seems to me that it would be an advantage to your clients and mine, and to the trial Court as well, that we should postpone the taking of any testimony in this present case until after the Court of Appeals shall have spoken."

The answer was filed on October 20, 1913.

Thereafter, in pursuance of the suggestion contained in Mr. Massie's letter relative to awaiting the decision of the Court of Appeals, the following stipulation was entered into in the case and signed by the respective attorneys on or about January 6, 1914 (if my memory serves me correctly), viz.:

WHEREAS, in the Circuit Court of Appeals of the United States, appeals are now pending in three suits brought by this same plaintiff against other parties for the alleged infringement of the same patent that is involved herein, which said appeals have been argued and submitted and are likely to be decided at the February, 1914, term of the said Court; and

WHEREAS, the decisions in said cases may have some influence in the matter of taking of testimony herein, and the parties have mutually agreed to extend the time allowed by law for taking depositions under the Revised Statutes until after decisions of said appeals;

NOW, THEREFORE, it is stipulated and agreed by and between the parties hereto as follows:

1. That the plaintiff shall have until and including February 28, 1914, in which to take depositions under Sections 863, 864 and 865 of the United States Revised Statutes.

2. That the defendant shall have to and including April 10, 1914, in which to take depositions under said sections. [56]

3. That plaintiff shall have until and including May 10, 1914, in which to take rebuttal depositions under said sections.

Provided that if the said Circuit Court of Appeals shall not have decided the said appeals, as anticipated, at said February, 1914, term of said Court, then and in that event each of the times hereinabove provided shall be respectively

and correspondingly extended thirty (30) days each; and if at the end of the thirty (30) days thus further allowed defendant, said decisions are not yet forthcoming, there shall be a further extension of the times of the respective parties of a like period and so on, and a reasonable time shall in any event be allowed by each party to take depositions after the rendering of said decisions.

It is understood and agreed that this stipulation refers to the taking of depositions for final hearing and is without prejudice to the right of the plaintiff to move for a preliminary injunction in said suit, and in case such motion is made this stipulation shall not be used by defendant against plaintiff in opposition to said action."

On April 9th, 1914, the stipulation was extended to May 10, 1914, for depositions by defendant, and to June 10, 1914, for rebuttal depositions by plaintiff.

On or about May 10, 1914, the stipulation was further extended to July 10 and August 10, 1914, respectively.

On June 24, 1914, the stipulation was extended to September 1st and October 1st, 1914, respectively.

All of these stipulations were made at the request of the defendant's attorney.

All of the various letters between myself and the defendant's attorneys heretofore referred to, are in my possession and will be produced for inspection, if desired by the Court or counsel.

The mandates from the Circuit Court of Appeals

in the test cases referred to, were filed in this court on or about June 8, 1914, and thereupon I immediately began making preparations for my motion for preliminary injunction.

Pressing other professional duties have prevented me from completing the same until now. [57]

A few days before commencing this suit I called at the place of business of the defendant, No. 334 Sutter Street, San Francisco, to discuss the matter of the proposed suit, with Mr. W. S. Gray, business manager of defendant at San Francisco; the clerk in charge informed me that Mr. Gray was absent from the city and would not return for quite awhile, and I then left not caring to discuss the matter with a subordinate clerk, but before leaving I saw in stock on the shelves a large number of sectional ribbed flower horns, bell-shaped and made of tin of substantially the same construction and mode of operation as the Victor flower horns, which were held to be an infringement in the case against Sherman, Clay & Company, in this court. In fact, without a close inspection they could not be distinguished from said Victor horns. They were on the shelves in the store-room and apparently ready for sale. A few days afterwards I called again, but Mr. Gray had not returned, and as I did not deem it prudent to delay suit any longer, I filed the bill in this case.

JOHN H. MILLER.

Subscribed and sworn to before me this 10th July, 1914.

[Seal]                      GENEVIEVE S. DONELIN,  
Notary Public in and for the City and County of San  
Francisco, State of California.



Copies of the within Notice of motion for injunction and affidavits in support thereof received this 13th day of July, A. D. 1914.

C. A. L. MASSIE,  
CHAS. E. TOWNSEND,  
For Defendant.

[Endorsed]: Filed Jul. 14, 1914. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [58]

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At a stated term, to wit, the March term, A. D. 1915,  
of the District Court of the United States of  
America, in and for the Northern District of  
California, Second Division, held at the court-  
room in the city and county of San Francisco,  
on Monday the 22d day of March, in the year  
of our Lord, one thousand nine hundred and  
fifteen. Present: the Honorable WILLIAM C.  
VAN FLEET, District Judge.

EQUITY 30.

SEARCHLIGHT HORN CO.

vs.

COLUMBIA GRAPHOPHONE CO.

**Order Granting Preliminary Injunction.**

Plaintiff's motion for an order granting a preliminary injunction enjoining and restraining the defendant until the final hearing from infringing upon United States letters patent, No. 771,441, dated October 4, 1904, which said motion was filed in this court on the 13th day of July, 1913, having come on regularly to be heard this 22d day of March, 1915, John H. Miller, Esq., appearing as attorney for



plaintiff, and Chas. E. Townsend, Esq., appearing as attorney for defendant, and the matter having been heard and considered by the Court, and the Court now being fully advised in the premises, and it appearing to the Court that the plaintiff is entitled to a preliminary injunction in the terms hereinafter following for the reason that the said letters patent have heretofore been adjudged valid by this Court in another case, and that such adjudication has been affirmed by the Circuit Court of Appeals of the United States for the Ninth Circuit, but notwithstanding such adjudication defendant has continued and is now threatening and intending to continue to infringe upon said letters patent and particularly claims 2 and 3 thereof, whereby plaintiff will be subjected to great and irreparable injury for which it has no plain, speedy or adequate remedy at law; [59]

NOW, THEREFORE, it is ordered that the plaintiff's said motion for preliminary injunction be and the same is hereby granted, and that, upon the filing by plaintiff of a good and sufficient indemnity bond to be approved by the Court in the sum of Two Thousand Dollars, conditioned to pay to the defendant such costs and damages as may be incurred or suffered by defendant from or by reason of said injunction if the Court shall finally determine that the same was wrongfully issued, a writ of injunction be issued under the seal of the Court enjoining and restraining the defendant, its officers, agents, servants and employees and all others acting in privity with the defendant, until the final hearing of the case, from

making, using or selling or offering or advertising or threatening to make, use or sell within the Northern District of California or elsewhere any horn or horns for phonographs or similar machines, either attached to or connected with or separate and disconnected from any phonograph or other machine, containing or embodying the invention claimed in and by claims 2 and 3, or either of them, of said letters patent No. 771,441, dated October 4, A. D. 1904, which said two claims read as follows:

“2. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally arranged strips of metal provided at their edges with longitudinal outwardly-directed flanges whereby said strips are connected and whereby the body portion of the horn is provided on the outside thereof with longitudinally-arranged ribs, said strips being tapered from one end of said horn to the other, substantially as shown and described.

“3. A horn for phonographs and similar instruments, said horn being larger at one end than at the other and tapered in the usual manner, said horn being composed of longitudinally arranged strips secured together at their edges and the outer side thereof at the points where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.”

And also from infringing upon the said two claims or either of them in any manner whatever and from aiding or abetting [60] or contributing to any

such infringement, and particularly and specifically from making, using, or selling, or offering or advertising or threatening to make, use, or sell any horn or horns for phonographs or similar machines, such as those horns heretofore and now being sold, advertised, and offered for sale and dealt in by defendant in connection with, or as a part of or pertaining to, phonographs or graphophones sold and dealt in by defendant and styled, respectively, the "Bijou" (type B. Z.), the "Improved Champion" (type B. N.), and the "Improved Royal" (type B. N. W.), —the said horns referred to being called and known as "Flower Horns" and consisting of metal strips joined together at their longitudinal edges by seams so as to provide ribs on the outside of the horn and being tapered from the inner to the outer and gradually but with a more abrupt taper adjoining the outer end, whereby a flaring outlet is produced and the horn is made in a bell shape. [61]

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(Title of Court and Cause.)

### **Writ of Injunction.**

The President of the United States of America to  
Columbia Graphophone Company, a Corpora-  
tion, Created Under the Laws of West Virginia,  
Its Officers, Agents, Servants, Employees, and  
all Others Acting in Privity with the Defendant,  
Greeting:

WHEREAS, the above-named plaintiff has heretofore filed in this court its bill of complaint alleging that on October 4, A. D. 1904, letters patent of the

United States, No. 771,441, for an improvement in horns for phonographs and similar machines, were issued to Peter C. Nielsen, and that said patent is now owned by plaintiff, and that you have heretofore infringed and threaten to continue to infringe upon claims 2 and 3 of said letters patent by selling and causing to be sold to others horns for phonographs and similar machines containing and embodying the inventions set forth and claimed in and by said claims 2 and 3 of said letters patent, contrary to the force and effect of the statutes of the United States in that case made and provided:

AND WHEREAS, the plaintiff has heretofore applied to this Court and made a motion in writing in due form asking for a preliminary injunction, enjoining and restraining you until the final hearing of this case from continuing the said infringement, which said motion was supported by the verified bill of complaint and certain affidavits and exhibits filed on behalf of plaintiff:

AND WHEREAS, said motion was heretofore, on March 22d, A. D. 1915, duly and regularly heard and considered by the Court [62] and an order made thereupon that said motion be granted and that a preliminary injunction be issued in accordance with said motion upon the filing by plaintiff of a good and sufficient indemnity bond to be approved by the Court in the sum of Two Thousand (\$2,000.00) Dollars conditioned to pay to defendant such costs and damages as may be incurred or suffered by defendant from or by reason of such injunction, not exceeding in the aggregate the sum of Two Thousand Dol-

lars, if the Court shall finally determine that the said injunction was wrongfully issued:

AND WHEREAS, the said bond has been filed and approved by the Court:

NOW, THEREFORE, we do strictly command and enjoin that you, the said Columbia Graphophone Company, a corporation created under the laws of the State of West Virginia, your officers, agents, servants, employees, and all others acting in privity with the defendant, do forthwith and until the final hearing of the case, cease, desist, and refrain from making or using or selling, or offering or advertising to make, use or sell, within the Northern District of California, or elsewhere, any horn or horns for phonographs or similar machines, either attached to or connected with, or separate and disconnected from any phonograph or similar machine, containing and embodying the invention described and claimed in and by 2 and 3 or either of them, of said United States letters patent, No. 771,441, dated October 4, A. D. 1904, which said two claims read as follows:

“2. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally-arranged strips of metal provided at their edges with longitudinal outward-directed flanges whereby said strips are connected and whereby, the body portion of the horn is provided on the outside thereof with longitudinally-arranged ribs, said strips being tapered from one end of said horn to the other, substantially as shown and described.

“3. A horn for phonographs and similar in-



struments, said horn being larger at one end than the other and tapered in the usual manner, said horn being composed of longitudinally-arranged strips secured together at their edges and the outer side thereof at the points [63] where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.”

And also from infringing upon the said claims or either of them in any manner whatever, and from aiding or abetting or contributing to any such infringement, and particularly from making, using or selling, or offering or advertising or threatening to make, use, or sell, any horn or horns for phonographs or similar machines, such as those horns heretofore and now being sold, advertised, and offered for sale and dealt in by defendant in connection with or as a part of or pertaining to the phonographs or graphophones sold and dealt in by defendant and styled, respectively, the “Bijou” (type B.Z.), the “Improved Champion” (type B.N.), and the “Improved Royal” (type B.N.W.)—the said horns referred to being called and known as “Flower Horns,” and consisting of metal strips joined together at their longitudinal edges by seams so as to provide ribs on the outside of the horn and being tapered from the inner to the outer end gradually but with a more abrupt taper adjoining the outer end, whereby a flaring outlet is produced and the horn is made in a bell shape.

Which said commands and injunctions you and each of you are hereby respectively required to observe and obey until our said District Court shall



make further orders in the premises.

Hereof fail not under the penalty of the law thence ensuing.

WITNESS the Honorable WILLIAM C. VAN FLEET, Judge of the said District Court, this 24th day of March, A. D. 1915, and the One Hundred and Thirty-ninth Year of the Independence of the United States of America.

[Seal]

WALTER B. MALING,  
Clerk.

By J. A. Schaertzer,  
Deputy Clerk. [64]

**Return on Service of Writ.**

United States of America,  
Northern District of California,—ss.

I hereby certify and return that I served the annexed Writ of Injunction on the therein-named Columbia Graphophone Co., a corporation, by handing to and leaving a true and attested copy thereof with Walter S. Gray, Pacific Coast Manager of Columbia Graphophone Co. personally at San Francisco, in said District on the 24th day of March, A. D. 1915.

JAMES B. HOLOHAN,  
U. S. Marshal.

By Otis R. Bohn,  
Office Deputy.

[Endorsed]: Filed Mar. 24, 1915. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.  
[65]

(Title of Court and Cause.)

**Stipulation Regarding Admission of Evidence at the Trial.**

It is hereby stipulated and agreed by and between the parties to the above-entitled suit as follows:

1. That at the trial printed, uncertified copies of U. S. and foreign letters patent may be used in evidence with the same force and effect as the originals or as certified copies, and that the date of issuance appearing on the same respectively shall be deemed to be and taken as the actual date of issuance thereof, subject, however, to correction in case of error found.

2. That certified copies of assignments constituting plaintiff's chain of title, duly certified by a Commission of Patents of the United States, may be used in evidence with same force and effect as the originals subject to correction in case of error found.

3. That subject to any objection that may be made as to incompetency, irrelevancy, immateriality or other grounds of inadmissibility, either party may offer in evidence at the trial as part of its record in this case any or all depositions, exhibits, testimony or other evidence offered by either party in the Equity Suit No. 15,623, of this plaintiff against Sherman, Clay & Company, now pending in the District Court of the United States for the Northern District of California, Second Division, or in the Equity Suit, No. 18, of this plaintiff against the Pacific Phonograph Company now pending in the

same court, or in Equity Suit No. 394 of this plaintiff against the Victor Talking Machine Company now pending in the United States District Court for the District of New Jersey, and the same when so offered and received in evidence in this case shall constitute and be part and portion of the proofs, exhibits testimony and evidence of the party so offering the same herein, with the same force and effect as if the same had been originally [66] taken and offered in the case at bar.

4. That within six years prior to the commencement of this suit in the Northern District of California and elsewhere in the United States, defendant sold horns for phonographs or graphophones similar in all respects to the two horns referred to in the affidavit of W. H. Locke, Jr., on motion for preliminary injunction and stated in said affidavit to have been purchased by him on October 4, 1913, from Columbia Graphophone Company at New York City; and that within six years prior to the commencement of this suit defendant issued and circulated catalogues entitled "Columbia Graphophones" M-250 of which a copy is hereunto annexed, and showing at pages 11, 13, 15, 21, 35, 37, 39, and 41 cuts and illustrations of horns sold by defendant.

5. It is also stipulated and agreed that at all the times mentioned in the Bill of Complaint, the United States Horn Company and plaintiff were and are corporations created under the laws of the State of New York and that the defendant was and is a corporation created and existing under the laws of the State of West Virginia.

Dated this 10th day of June, 1915.

JOHN H. MILLER,  
Solicitor for Plaintiff.

C. A. L. MASSIE,  
C. A. L. MASSIE,  
CHAS. E. TOWNSEND,  
Solicitors for Defendant.

So ordered:

WM. C. VAN FLEET,  
Judge.

[Endorsed]: Filed Jun. 16, 1915. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [67]

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(Title of Court and Cause.)

**(Reporter's Transcript.)**

Tuesday, November 23, 1915.

Counsel Appearing:

For the Plaintiff: JOHN H. MILLER, Esq.

For the Defendant: CHARLES E. TOWN-  
SEND, Esq.

Mr. MILLER.—In this case against the Columbia Graphophone Company, it is all covered by a stipulation that is on file as of June 10th, last, and it says first, that at the trial printed, uncertified copies of United States and foreign letters patent may be used in evidence and so forth; second, that certified copies of assignment constituting plaintiff's chain of title, duly certified by a commissioner of patents of the United States, may be used in evidence with the same force and effect as the originals, subject to correction in case of error found; third, that subject to

any objection that may be made as to incompetency, irrelevancy, immateriality or other grounds of admissibility, either party may offer in evidence at the trial as part of its record any or all depositions, exhibits, testimony or other evidence offered by either party in the equity suit No. 15,623 of this plaintiff against Sherman, Clay & Co. now pending in the United States District Court for the Northern District of California, Second Division, or an Equity Suit No. 18, of this plaintiff against the Pacific Phonograph Company now pending in the same court, or an Equity Suit No. 394 of this plaintiff against the Victor Talking Machine Company, now pending in the United States District Court for the District of New Jersey, [68] and the same when so offered and received in evidence in this case shall constitute and be part and portion of the proof, exhibits, testimony and evidence of the party so offering the same herein, with the same force and effect as if the same had been originally taken and offered in the case at bar.

Then it admits that within six years prior to the commencement of this suit—it is also stipulated that within six years prior to the commencement of this suit in the Northern District of California and elsewhere in the United States, defendant sold horns for phonographs or graphophones similar in all respects to the two horns referred to in the affidavit of W. H. Locke, Jr., on motion for preliminary injunction, and stated in said affidavit to have been purchased by him on October 4, 1913, from Columbia Graphophone Company at New York City; and that within



six years prior to the commencement of this suit defendant issued and circulated catalogs entitled "Columbia Graphophones," M-250, of which a copy is hereunto annexed and showing at pages 11, 13, 15, 21, 35, 37, 39 and 41 cuts and illustrations of horns sold by defendant.

I produce the two horns referred to in that paragraph as samples of the infringing horns. One is a red horn, and bears on it, "Horn purchased by W. H. Locke, Jr., on October 4, 1913, from Columbia Graphophone Company, 35-37 West Twenty-third Street, New York City." That is the one that was used on the motion for a preliminary injunction, and is referred to in this stipulation. I asked that that be marked "Plaintiff's Exhibit No. 1, Defendant's Red Horn."

The other one is of the same kind, but a little larger, and made of black with gold stripes; that has on it the words, "Horn purchased by W. H. Locke, Jr., on October 4, 1913, from Columbia Graphophone Company, 35-37 West Third Street, New York [69] City." I ask that that be marked "Plaintiff's Exhibit No. 2, Defendant's Black Horn."

I now offer in evidence all the testimony, depositions and exhibits that were offered in evidence by us in the case just tried, No. 18, constituting the *prima facie* case of the plaintiff, they being offered under the stipulation which I have read. In that way we complete the *prima facie* record of the plaintiff in the Columbia case.

Mr. TOWNSEND.—On behalf of the defendant, and in accordance with the stipulation of June 10,



1915, defendant offers in evidence all the depositions, exhibits and testimony or other evidence offered on behalf of the defendant in Equity Suit No. 15,623, the suit of this plaintiff against Sherman, Clay in this district, and of the defendant in Pacific Phonograph Company just heard, and also such further depositions, exhibits or testimony or other evidence that the defendant may offer in the New Jersey case, and as I stated this morning, the defendant is willing to abide by any decree that may be entered in the Pacific case.

Mr. MILLER.—We offer in evidence in rebuttal in the Columbia case the same record that was offered in evidence in the case just tried, No. 18.

(Thereupon the case was submitted.)

[Endorsed]: Filed Jan. 22, 1916. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [70]

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**[Proceedings Had October 30, 1913, 10 A. M.]**  
**SEARCHLIGHT HORN COMPANY,**

vs.

**PACIFIC PHONOGRAPH COMPANY and BAB-  
SON BRS., INC.**

**COMPLAINANT'S PROOFS.**

CHRISTIAN KRABBE.....	2-24
EDWIN A. MERRITT.....	25-47
WILLIAM H. LOCKE.....	48-62
ARTHUR P. PETIT.....	63

[71]

*United States District Court, Northern District of  
California, Second Division.*

SEARCHLIGHT HORN COMPANY,

Complainant,

against

PACIFIC PHONOGRAPH COMPANY,

Defendant.

SEARCHLIGHT HORN COMPANY,

Complainant,

against

BABSON BROTHERS, INCORPORATED,

Defendant.

Proofs for complainant for final hearing taken pursuant to United States Statutes, the equity rules and the order of this Court, and pursuant to notice by complainant's counsel.

Office of Duncan & Duncan,

73 Nassau Street,

October 30, 10 A. M.

Present: JESSIE B. KAY, Notary Public.

FREDERICK S. DUNCAN, of Counsel for  
Complainant.

Complainant's counsel offers in evidence two original stipulations, the first extending defendant's time to take depositions herein to and including the fourth day of October, 1913, and the second extending defendant's time to and including the eleventh day of October, 1913, and extending complainant's time thirty days after October 11, 1913. Complainant's counsel further states that in response to tele-

graphic request from defendant's counsel complainant's counsel [72] extended defendant's time to and including Monday, October 27th for the sole purpose of enabling defendant's counsel to recall the witness E. A. Hawthorne and complete his deposition upon the understanding that the time to complete complainant's proofs by deposition be extended thirty days and with the understanding that plaintiff's proofs would be taken in the East irrespective of the contemplated Western trip of defendant's counsel. Complainant's counsel spreads upon the record the following telegram sent by complainant's counsel to defendant's counsel on October 24th from Cleveland.

“Louis Hicks,  
Woolworth Building,  
New York City.

“Glad to extend time for Hawthorne deposition Monday provided plaintiff's time is extended thirty days with understanding that plaintiff's proofs will be taken in East irrespective of your trip. Miller urges completion within two weeks. Can't you get Petit or Massie to represent you during absence. Back Monday, possibly Saturday.”

On Monday, October 27th, defendant's counsel having received complainant's counsel's telegram produced and examined the witness E. A. Hawthorne. On Tuesday complainant's counsel served notice upon defendant's counsel of the taking of the deposition of complainant's witnesses Christian Krabbe, Edward A. Merritt and William H. Locke, Jr., and others commencing October 30, 1913.

Complainant's counsel offers in evidence the original notice served upon defendant's counsel which notice was returned the same day with the annotation appearing at the foot thereof signed by defendant's counsel declining to accept the notice in question. [73]

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**[Deposition of Christian Krabbe, for Complainant.]**

CHRISTIAN KRABBE, being called as a witness for complainant and having first been duly sworn, deposes as follows in answer to questions by Mr. Duncan:

Q. 1. What is your name, age, residence and occupation?

A. My name is Christian Krabbe; my age is 44, and I live in Yaphank, Suffolk County, New York, and my business at present is farming and real estate.

Q. 2. Before you went into farming and real estate what was your business?

A. I was in the electrical business at 166-168 Broadway, Brooklyn, for about twenty-one years, and then I was at 292 Broadway, Brooklyn, for four years.

Q. 3. Did your business include the handling of electrical supplies of various sorts?

A. Yes, sir.

Q. 4. Did you at any time handle phonographs and phonograph supplies?

A. Yes, sir, for many years prior to 1900 and I believe that I was the first man or one of the first to sell an Edison phonograph in Brooklyn.

(Deposition of Christian Krabbe.)

Q. 5. What was the first phonograph that you handled in your business?

A. The first phonograph that I handled was an Edison Electric Machine. A man named William Vogel, one of the firm of Vogel and Son, large manufacturers of tinware in South 9th Street and Kent Avenue, Brooklyn, came to me and spoke to me about phonographs. Mr. Vogel had been a customer of mine for many years in electrical supplies. Knowing that I was selling electrical supplies sold by the Edison Manufacturing Company managed by a man named Gladstone in 23d Street, New York, he came to me and said that he had seen the Edison phonograph and wanted one and asked me why I couldn't get those phonographs and make some money on them. I said I [74] would and went over and got one and sold it to him.

Q. 6. What year was it that you purchased this first Edison machine?

A. I can't fix the year exactly, but it was in the early nineties.

Q. 7. How long did you continue selling the Edison phonograph?

A. Until the latter part of 1908 or 1909.

Q. 8. What other phonographs or talking-machines did you sell beside the Edison phonographs?

A. The Victor, Xonophone Columbia and Talkaphone.

Q. 9. How early did you commence selling these later machines and up to what date did you continue handling them?



(Deposition of Christian Krabbe.)

A. I commenced getting these other machines or some of them shortly after I got the first Edison machine or as soon as the different machines were put on the market and I continued handling these different machines up to the time I went out of the talking machine business some four or five years ago.

Q. 10. Did you know Peter C. Nielsen the patentee of letters patent No. 771,441, in suit?

A. I got acquainted with him, yes.

Q. 11. Did you ever acquire an interest in the patent in suit? A. Yes.

Q. 12. Did you acquire the interest in the patent in suit that you have just referred to by a document in writing? A. I did.

Q. 13. I show you certified copy of an assignment of letters patent 771,441, executed by Peter Christian Nielsen under date of February 2, 1905, and acknowledged by him under date of February 10, 1905, and recorded February 17, 1905, in Liber M-71 page 61 of the assignment records in the United States Patent Office and I ask you whether this is a [75] copy of the instrument by which you obtained your interest in the Nielsen Patent? A. It is.

Q. 14. Were you present when Mr. Nielsen signed the assignment of which this is a certified copy?

A. Yes.

Q. 15. Did you see him sign the original?

A. Yes, I did.

Q. 16. What became of the original after Mr. Nielsen signed it?

(Deposition of Christian Krabbe.)

A. He delivered it to me and I took it with me.

Q. 17. What did you do with it then?

A. I had it sent to Washington to be recorded and afterwards I got it back.

Q. 18. At the time that Mr. Nielsen signed the original document of which this is a certified copy did you pay to him the purchase price referred to in the assignment?

A. Yes, I paid him the money before he give me the paper.

Q. 19. What if you know, has become of the original assignment of which this is a certified copy?

A. Subsequently I executed certain assignments relating to this patent to Mr. Locke and to the United States Horn Company but I think I kept the original assignment from Nielsen to me. Mr. Locke has asked me to find this and I have several times gone through my papers but cannot find the original assignment. It is possible that this assignment may have been turned over to Mr. Locke, at any rate I cannot find it although I have made several searches.

Complainant's counsel offers in evidence the certified copy of the assignment from Nielsen to Krabbe and the same is marked "Complainant's Exhibit Certified Copy Nielsen-Krabbe Assignment." [76]

Q. 20. How long before the date of Mr. Nielsen's assignment to you had you become acquainted with Mr. Nielsen?      A. In April, 1904.

Q. 21. State the circumstances connected with your meeting Mr. Nielsen in April, 1904?

(Deposition of Christian Krabbe.)

A. One evening in April I was standing in my store when Nielsen called and waited about until I was finished with my customers. He had a horn in a black bag. He then asked me if I would talk with him and said he would like to sell me some horns. He took the horn out of the bag and I looked it over. I asked him what he would sell his horns for and he said \$2.50 or \$3.50 I can't exactly remember what. I was not much interested because I thought the price was too high and told him that I was buying my horns black and gold for \$1.10 and a horn like the black and gold for \$1.55, the prices may differ a little according to the manufacturer according to how heavy the metal was in the horn.

Q. 22. Did you do any business with Mr. Nielsen at that time? A. No.

Q. 23. Did you subsequently get possession of the horn that he showed you in April, 1904?

A. Yes, later on early in 1905 I bought Mr. Nielsen's patent and at the same time I bought his entire stock of horns and tools and his good will and included among the horns was the sample horn that he always carried about to show his customers and this was the one that he had shown me when he called on me in April. He kept this horn in his room in the black bag and did not keep it in the factory with the other horns.

Q. 24. What became of the horn that Mr. Nielsen showed you in April, 1904 and that you subsequently got possession of when you bought him out in the early part of 1905? [77]

(Deposition of Christian Krabbe.)

A. I marked this horn for identification with my signature and gave it to Mr. John H. Miller of San Francisco. I was in San Francisco on the 1st day of October, 1912 as a witness in the action brought by the Searchlight Horn Company against Sherman, Clay & Company in the United States District Court, Northern District of California, Second Division, and I then produced the horn you are asking about and identified it and it was offered in evidence as Plaintiff's Exhibit No. 9. At the end of the trial I left the horn with the Court and I understand that it is still an exhibit in that case and is being used in connection with an appeal that was taken from the judgment that was rendered in favor of the plaintiff.

Complainant's counsel now offers in evidence the horn referred to by the witness in his last answers and which was produced by the witness as an exhibit in the action of the Searchlight Horn Company against Sherman, Clay & Company and which was marked Plaintiff's Exhibit 9 in said action and said horn is now marked "Complainant's Exhibit Nielsen Horn April, 1904."

Q. 25. Prior to your meeting Nielsen in April, 1904, had you heard of Nielsen or his horn?

A. Yes, sir. I had heard of him, had heard that there was a man, named Nielsen, over in Greenpoint making a new kind of horn that looked like a flower, called a flower horn. I heard that he had been showing it about in different jobbers' stores.

Q. 26. Referring now to the old Edison phonograph that you started handling in the early nineties

(Deposition of Christian Krabbe.)

please state what kind of a horn was supplied or used with that machine?

A. A small tin horn about eleven or twelve inches long and about five inches in diameter at the big end made out of [78] one piece of tin soldered or pressed together.

Q. 27. Please look at page 70 of "Complainant's Exhibit Manual of the Edison Phonograph" and point out any horn that corresponds with the horn that you say was supplied and used with the Edison phonograph when you first handled that machine?

A. A small conical horn made of tin, black enamel was what was used on this machine and such a horn is indicated near the middle of the cut on page 70 and I have marked it with the figure 1.

Q. 28. What kind of horns was used on the Victor and other machines that you handled during the early nineties?

A. Black enamel tin horns of larger size than the Edison horn I have just referred to. Also some brass horns of larger size. The horns were about 18 to 20 inches long and were conical in shape with straight sides. At the larger end of the cone a flaring bell was attached.

Q. 29. Describe generally the kinds of horns that were supplied by the talking machine companies or that were used by the public in connection with talking machines prior to the time when you first heard of the Nielsen horn?

A. There was always some small horns furnished with the machines similar to the ones I first men-



(Deposition of Christian Krabbe.)

tioned, as being supplied with the Edison phonograph. A few years later the Edison Company made a horn of the same size as the horn described but with a brass bell on it which made it fourteen inches, ten inches with a four-inch bell made about a fourteen-inch horn and Edison Company continued this as their standard equipment until the flower-horn was adopted by them after Nielsen had put such horns on the market. If the public wanted a larger horn or a horn of a different shape for use on the Edison machine they had to buy it from some jobber or dealer and there were a number of manufacturers [79] who made horns for the jobbers and dealers. These horns were sometimes made entirely of brass particularly at the beginning and later the popular horn that was sold almost universally was the horn called B. and G., a horn similar to the horn of the Edison Company only larger, some sizes as large as ranging from fourteen to fifty-six inches. The B. and G. horn was much cheaper to make and easier to keep clean and for this reason largely replaced the brass horn. The B. and G. horn had a conical body made of a single piece of metal, the edges of which were joined by a seam or by solder and the sides of which were straight. To the large end of the cone a polished spun brass bell was attached.

Q. 30. Please look at the Complainant's Exhibit Hawthorne & Sheble Advertisement of January 15, 1905, and compare the illustration at the right-hand side of that advertisement with the B. and G. horn

(Deposition of Christian Krabbe.)

that you have been describing?

A. I have done so and I find that the illustration at the right-hand side of the advertisement correctly shows the shape of the B. and G. horn before mentioned and shows the spun brass bell joined to the conical body. This particular horn of the Hawthorne & Sheble Mfg. Co. apparently is covered with their patented "silk finish" according to the statement of the advertisement but that company and a number of other manufacturers put the B. and G. horn on the market for many years without any exterior finish except paint or enamel. The form was similar to that shown in the advertisement.

Q. 31. Please continue your statement of the horns supplied by the talking machine companies or used by the public prior to the time when you first heard of the Nielsen horn?

A. There were some attempts made to use glass horns with the idea of making a seamless horn, people having the idea that a horn without a seam would give a better tone [80] than a horn with seams. The glass horns were used very little, however, because they were too expensive, broke too easily and did not seem to give any better results.

Paper horns were also offered for sale and were used to some extent for soprano voices and string music, but were sold in small quantity compared with the metal horns. The all brass horns that I have mentioned before were largely replaced by the B. and G. horn, but were continued in use for some purposes, in comparatively small quantities.

(Deposition of Christian Krabbe.)

The shape of the all brass horn was substantially the same as that of the B. and G. horn, only these were made entirely of brass.

A few horns were offered on the market made of silveroid to represent aluminum and others were offered that had the usual tin or sealed body with the aluminum bell. These horns were made by the Hawthorne & Sheble Mfg. Co. In form they were identical with the B. and G horn. The silveroid did not sell good because they turned black and people did not want them and the aluminum horns were too expensive.

Q. 32. You have now spoken of what the Edison Company did in regard to supplying horns with its machines. What did the Victor Company and the other talking machine companies do from the time you first handled their machines up to the time you heard of the Nielsen horn?

A. The Victor and other companies followed the same practice as the Edison Company and put out substantially the same horns, the sizes varying somewhat to fit the different machines. The horns supplied by these other companies were all small horns and were of the same construction as those I have described in connection with the Edison machines.

If the public wanted larger horns or horns of different [81] shape or material they had to buy horns made by independent manufacturers and sold through jobbers and dealers. This continued the practice of all the talking-machine companies up to

(Deposition of Christian Krabbe.)

the time when they adopted the Nielsen flower-horn and made it part of their standard equipment.

Q. 33. How was the horn that Nielsen showed you in April, 1904, constructed?

A. It was made up of a number of elongated strips extending from the small end to the big end of the horn and secured together at their edges by L-shaped flanges that were soldered together. The outside shape of the horn was curved like the outside of a morning-glory.

Q. 34. What was the shape of each of the strips that were joined together to form this horn that Nielsen showed you in April, 1904?

A. They were long strips narrow at one end and larger at the other end and the sides of the strips were curved. The sides of the strips were turned up to form flanges.

Q. 35. How did you come to purchase the Nielsen Patent and take over his horn business in February, 1905?

A. Not long after Nielsen showed me a horn in April, I passed by the shop of one of my competitors about a block and a half away from me, the man's name was Kanofsky and saw one of Nielsen's horns in the window. This horn was painted in imitation of a flower like a morning-glory. I began to wonder about the Nielsen horn and before long people began to come to my store and ask if I had got that new kind of Swedish horn. I told them I didn't have it, but they didn't seem to want any other kind or to buy a machine unless I had that

(Deposition of Christian Krabbe.)

horn. Not long after that I went over to New York to a wholesale place by the name of Blackman who was agent for the Edison and the Victor Companies to buy some supplies. [82] I saw his whole window filled up with morning-glory horns painted in different colors. I asked the clerk who made those horns and he said some Danish or Swedish man from Greenpoint came over there and wanted to give them the agency, but he did not come back but went and gave Bettini the agency. The clerk said that Blackman had then sent down to the Tea Tray Company, I think it was and got them to make the horns like his.

Q. 36. What kind of horns were those that you saw in Blackman's window?

A. Flower-horn exactly like the one that Nielsen had shown me.

Q. 37. What was the next place, if any, that you saw a flower-horn of this construction?

A. I think it was Bettini. He had the Nielson horn there.

Q. 38. Who was Bettini?

A. He was another wholesaler in New York City. I saw Nielsen's horns there. They told me that the horns were made in Greenpoint by a man named Nielsen.

Q. 39. Did they tell you anything about the horns being patented?

A. They showed me a little piece of yellowish paper pasted in the horns and it said on it "patent applied for."

Q. 40. What happened next so far as your con-



(Deposition of Christian Krabbe.)

nection with the Nielsen horn was concerned?

A. I got sorry that I hadn't paid attention to Nielsen at first. By-and-by I looked him up and went over to Greenpoint to see him about getting a few horns as I thought that I could buy them cheaper of him than anybody else. He was living on the second floor and was making the horns downstairs in an empty store with a living-room in [83] the back. He showed me a lot of horns in a drying room that was heated to bake the enamel by a lot of oil stoves. He commenced to talk Danish to me and we spoke together in Danish. He told me he had lots of trouble because other people were making his horns but now he got his patent and he was going to an attorney. He showed me his patent.

Q. 41. What nationality did Nielsen belong to?

A. Denmark.

Q. 42. Could he understand English well?

A. No; he had great difficulty in talking and understanding English.

Q. 43. How many horns did you see there at Nielsen's shop?

A. A good many. I couldn't say how many but the room was full of them.

Q. 44. Were there any horns being made up when you were there?

A. The workmen had gone home, it was six o'clock. He had his wife, one man and two girls working for him. The girls did the painting. There were a lot of partially finished horns there that Nielsen showed me. He showed me his ma-

(Deposition of Christian Krabbe.)

chinery and how he made the horns.

Q. 45. How were the horns made that he showed you at the Greenpoint shop?

A. They were made the same as I have already described except that some of them had the flanges on the edges of the strips soldered together and some had the edges bent over into a seam. He had a machine which he had bought for the purpose of making this seam. He said that he made them with this seam because it was cheaper and because his patent allowed him to make them with a seam like this as well as with the flanges soldered together. [84]

Q. 46. During the year 1904, did you see the sale of flower-horns in any quantity by jobbers and dealers?

A. I saw the horns made by Nielsen sold in considerable quantity by Bettini and by some others, and I also saw horns of the same construction sold in very large quantities by a large number of other manufacturers and dealers, I bought horns from Nielsen and sold them myself.

Q. 47. What was the result of your dealings with Nielsen during 1904?

A. It resulted in me calling on him many times buying his patent and also his business under an agreement by which he was to work for me for one year and help and assist me in making and selling these horns and making a success of the business, and in defending his right under the patent.

Q. 48. As a matter of fact, did Mr. Nielsen remain in your employ for a year?

(Deposition of Christian Krabbe.)

A. Nielsen carried on the business for me for about a month at Greenpoint until the lease expired. Then I opened up a factory at 124 Broadway, Brooklyn, after we had established a company named the United States Horn Company. Nielsen remained with that concern for six ~~months~~ to nine months and then he claimed that his eyes got sore and wanted to take a rest. He finally left and went back to Denmark, promising to come back but never did.

Q. 49. Where is Mr. Nielsen now?

A. I do not know; the last I heard of him was in Denmark in 1906. I have tried to get in touch with him since then but have not been able to locate him and I do not know where he is.

Q. 50. What is this document that I now show you?

A. It is an assignment of half my interest in the Nielsen Patent to William Locke. This is my signature at the foot of the assignment which is dated February 14, 1905. [85]

Q. 51. Did you execute and deliver this assignment to William H. Locke, Jr., named as assignee therein?      A. I did.

Complainant's counsel offers in evidence the original assignment in question which is marked "Complainant's Exhibit Krabbe-Locke assignment of February 14, 1905."

Q. 52. Did you at any time assign your remaining interest in the Nielsen patent to the United States Horn Company after you had made the assignment to Mr. Locke just offered in evidence?

(Deposition of Christian Krabbe.)

A. Yes, sir.

Q. 53. Please examine the certified copy that I now hand you of an assignment from Christian Krabbe to the United States Horn Company of "all my right, title and interest in and to said invention, said letters patent No. 771,441," dated February 24, 1905, acknowledged February 24, 1905, and recorded March 1, 1905, in Liber O-71, page 41 of Transfers of Patents in the Patent Office at Washington and state whether this is a correct copy of the assignment that you say that you made to the United States Horn Company?

A. Yes, sir, I executed an assignment of which this is a copy and delivered the same to the United States Horn Company at or about the date of the assignment in question.

Complainant's counsel offers in evidence the certified copy of the assignment just produced and the same is marked "Complainant's Exhibit certified Copy Assignment Krabbe-United States Horn-Company, February 24, 1905."

Q. 54. Did William H. Locke, Jr., to whom you assigned a half interest in the Nielsen patent assign that interest to the United States Horn Company?

A. Yes, sir.

Q. 55. I show you a document purporting to be an assignment from William H. Locke, Jr., to the United States Horn [86] Company dated February 24, 1905, and ask you whose signature that is at the bottom at the foot of this instrument?

A. That is William H. Locke, Jr.

(Deposition of Christian Krabbe.)

Q. 56. Do you know Mr. Locke's signature?

A. Yes, I have seen him make his signature many a time.

Q. 57. Were you connected with the United States Horn Company?

A. Yes, sir, I owned half of the stock and was treasurer of that company, Mr. Locke and myself formed that company and we both assigned to it our interests in the Nielsen patent at the same time. The assignment that you showed me signed by William H. Locke, Jr., was delivered by him to the company the same time as my assignment to the company.

Complainant's counsel offers in evidence the original assignment referred to by the witness and the same is marked "Complainant's Exhibit Locke-United States Horn Company assignment February 24, 1905."

Q. 58. What kind of horns did the United States Horn Company that you say was formed by you and Mr. Locke make?

A. They made the Nielsen horn that I have already described.

Q. 59. With what kind of seam connecting the different sections of the horn did the United States Horn Company make its Nielsen horn?

A. We may have made a few with the L-shaped butt seam soldered but practically all were made with the edges turned over and locked together without solder. These horns that we made were identical



(Deposition of Christian Krabbe.)

with the horns that I saw Nielsen making at Greenpoint.

Q. 60. Have you recently had in your possession any of the horns made by the United States Horn Company?

A. Yes, in the trial of the Sherman-Clay Co. action in [87] San Francisco in October, 1912, I produced two horns that were made by the United States Horn Company, one of them was a blue horn that was offered in evidence as Plaintiff's Exhibit 10 that had the stripe joined together by flange seams soldered. The other one was a red horn offered in evidence as Plaintiff's Exhibit 11 that had the strips joined together by the bent-over seams, without solder. Both of these horns were made by the United States Horn Company.

Complainant's counsel offers in evidence the two horns that were offered in evidence in the Sherman Clay Co. action and the same are marked "Complainant's Exhibit United States Horn Company's horns Nos. 1 and 2, respectively."

Q. 61. Are you acquainted with the Searchlight Horn Company, complainant in this suit?

A. I know that company and have had dealings with its officers. It succeeded to the business of the United States Horn Company and when the Searchlight Horn Co. was organized or shortly thereafter, I sold out my interest to Mr. Locke.

Q. 62. About when was it that the Searchlight Horn Company succeeded to the business of the United States Horn Company?

(Deposition of Christian Krabbe.)

A. I have here the original assignment from the United States Horn Company to the Searchlight Horn Company dated January 4, 1907.

Q. 63. Do you know who was president of the United States Horn Co. in 1906 and early in 1907?

A. Mr. Winter.

Q. 64. What is his full name?

A. Alexander K. Winter.

Q. 65. Do you know the signature of Mr. Winter?

A. I have seen him sign his name often. [88]

Q. 66. Who was secretary of the United States Horn Company during 1906 and early in 1907?

A. John C. De Graw.

Q. 67. Do you know his signature?

A. Yes, sir, I have seen him sign his name often.

Q. 68. Whose signatures are those attached to the document you recently referred to, dated January 4, 1907?

A. They are the signatures of Mr. Alexander K. Winter, who was president of the United States Horn Company, Mr. John C. De Graw, who was secretary of that company, Mr. William Locke, Jr., whose signature I know. I do not know the other signature.

Complainant's counsel offers in evidence the assignment in question and the same is marked "Complainant's Exhibit Assignment United States Horn Company-Searchlight Horn Company, January 4, 1907."

Q. 69. After the Nielsen horn was offered for sale by him and by the Bettini Phonograph Company,

(Deposition of Christian Krabbe.)

what effect did this horn have in the phonograph trade?

A. It practically did away with the B. and G. horn and with whatever all brass horns still remained in use. Those concerns that have been making the B. and G. and brass horns started making flower horns in imitation of the Nielsen horns. I have already referred to the flower horns that I saw at Blackman's place. In a short time flower horns were put out by nearly all of the manufacturers and not long afterwards the talking-machine companies themselves adopted the flower horns as part of their standard equipment and raised the price of their machines so as to include the horns. This practically put the independent horn manufacturers out of business except those that continued making the horns for the talking-machine companies. [89]

Q. 70. To what extent was the flower horn used after it was introduced by Nielsen in 1903?

A. Toward the latter part of 1904 and for a number of years succeeding it was practically the only metal horn used and was used in enormous quantities.

Q. 71. Under what name was Mr. Nielsen doing business when you visited him in Greenpoint?

A. Under the name of The Lilly Phonograph Horn.

Q. 72. Can you produce one of the billheads used by Mr. Nielsen in the latter part of 1904?

A. Yes, I now produce such a billhead dated December 22, 1904, which is pasted on page 9 of Nielsen's account-book which came into my possession in

(Deposition of Christian Krabbe.)

February, 1905, when I bought his business.

By complainant's counsel: This is the same bill-head that has already been offered as complainant's exhibit "Billhead of the Lily Phonograph Horn."

Q. 73. Were you acquainted with the operations of the Nova Phonograph Company?

A. I was acquainted with Mr. Senne and I know that that concern was engaged in making and selling flower horns the same as the Nielsen horn. They made these horns at first out of metal the same as Nielsen and we notified them that they were infringing the Nielsen patent and afterwards we brought suit against that company.

Q. 74. Who organized or operationed the Nova Phonograph Horn Company?

A. I understand that Mr. Senne and his father-in-law Mr. Petersen and a man named Andraesen who had formerly been employed by Mr. Nielsen selling Mr. Nielsen's horns.

Q. 75. Who is the A. Andraesen whose name appears at the top of page 1 of the account-book kept by Nielsen which you produced a short time ago? [90]

A. Andraesen was the salesman that I have already referred to. Mr. Nielsen told me that this entry at the top of page 1 covered horns that he had delivered to Andraesen to go out and sell. The translation of the entry of this page is "Horns delivered to A. Andraesen."

Q. 76. What is your nationality?      A. Danish.

Q. 77. And do you speak the Danish language?

A. Yes.

(Deposition of Christian Krabbe.)

Q. 78. What is this book that you have produced?

A. It is an account-book of Nielsen which he gave me after I bought him out.

Q. 79. In whose handwriting are the entries in this book?

A. Most of them are in Nielsen's and a few of them in Mrs. Nielsen's.

Complainant's counsel offers in evidence the book in question and the same is marked "Nielsen's Account-book."

Q. 80. Do you know whether Mr. Nielsen had any earlier account-book covering the manufacture and sale of these horns prior to the first date in the book just offered in evidence?

A. I do not. He may have had other books or records. This book was only material to me because when I bought his business some of this money was still due from the Bettini Phonograph Company and I tried to collect it.

Q. 81. When you bought the business from Nielsen did you do anything toward notifying any of the companies that were manufacturing flower horns of your rights under the Nielsen patent?

A. I went from door to door to various of these companies, explained it to them and showed them the patent and my assignment. I saw the Douglas Phonograph Company and [91] notified them of my rights and they told me they wished me luck and that the invention no doubt belonged to Nielsen but I would have to prove it in the courts. I also notified the Teatray Company, talking personally with



(Deposition of Christian Krabbe.)

Mr. Conger, the superintendent. I also saw the Standard Metal Manufacturing Company and a number of other concerns. Among others I saw the Nova Phonograph Horn Company, and talked with Mr. Senne and notified him, after my representative had bought a horn from Mr. Senne.

After the United States Horn Company was formed that company notified the various infringing manufacturers and requested them to stop their infringement, but so many concerns were making the infringing horns that they all said that we would have to go to the courts before any particular one would stop making the horn.

Q. 82. What was your financial condition during the period when you owned the patent in suit?

A. I had no cash, my money was tied up in vacant property. For that reason I got Mr. William H. Locke, Jr., interested and we formed the United States Horn Company.

Q. 83. What was the financial condition of the United States Horn Company during the period it was the owner of the patent in suit?

A. Mr. Locke contributed some considerable sum of money which the company needed for the manufacture of its horns. We quickly used up all the money that we had in making horns and in trying to sell them. We found it impossible, however, to compete against the infringing sale of horns made in enormous quantity by the big horn manufacturers. When we notified these manufacturers to cease infringement they told us to go to court or put us off

(Deposition of Christian Krabbe.)

with one excuse or another. We found that the expense of litigation against these companies would be enormous and we were unable to get together the money that would enable [92] us to commence suit with any fair chance of carrying it through to a conclusion. The rapid growth of the infringing sales of horns practically drove us out of business and caused us to lose the money we had put in originally and we were, therefore, practically helpless in the matter of suing these infringers. A number of the concerns that we notified seemed greatly interested in our patent and some of them tried to get rights in it. Among these concerns was the Standard Metal Manufacturing Company who wrote Mr. Nielsen a letter dated March 8, 1905, which letter I now produce. The letter was dictated by W. A. L., which initials stand for W. A. Lawrence. In January, 1906, Mr. Lawrence wrote me another letter which I also produce.

Complainant's counsel offers in evidence the two letters produced by the witness and the same are marked "Complainant's Exhibits Standard Metal Mfg. Co. Letter March 8, 1905," and "W. A. Lawrence letter January 2, 1906."

Q. 84. When did you first hear the expression flower horn?

A. Toward the end of 1903 in connection with the horns offered by Nielsen. The horns made like Nielsen's were called Lilly horns and Morning-glory horns and a little later all of these horns were called flower horns. The term flower horn was not known

(Deposition of Christian Krabbe.)

in the trade until after Nielsen's horn was introduced.

Q. 85. Prior to your first acquaintance with the horn sold you by Mr. Nielsen had you ever seen or known of a horn having curved flaring sides made up of a number of strips of metal with longitudinal seams running from the big end of the horn to the narrow end, such strips being joined so as to form longitudinal ribs on the outside of the horn?

A. No, sir, the first horn like that was the horn that was shown me by Mr. Nielsen. [93]

Q. 86. Were you familiar with the horns made by the Hawthorne & Sheble Manufacturing Company prior to 1904?

A. Yes, I was familiar with those horns, having bought such horns and seen them often being sold by jobbers and dealers generally.

Q. 87. Did you ever see or hear of a horn made by Hawthorne & Sheble Mfg. Co. with steel, aluminum or other material prior to 1904 and having a number of longitudinal sections joined at their edges to form external ribs running from the large end of the bell to the small end of the horn? A. No, sir.

Q. 88. Were you familiar with Graphophone Grand Talking machine made by the Columbia Phonograph Company? A. Yes.

Q. 89. Can you produce a catalogue of the Columbia Phonograph Company?

A. Yes, sir, this has been among my old papers for years. It is a catalogue bearing date November 1, 1898.

(Deposition of Christian Krabbe.)

Complainant's counsel offers in evidence the catalogue in question and the same is marked Complainant's Exhibit Columbia Phonograph Catalogue November 1, 1898.

Q. 90. Can you produce any Hawthorne & Sheble catalogues?

A. Yes, I hand you three Hawthorne & Sheble catalogues issued by that concern at some early date which have been in my possession for many years. One of these catalogues entitled "Records for Graphophones and Phonographs" contains opposite page 16 a bulletin dated April, 1899. The second catalogue, entitled "How to make records," seems to correspond in period with the catalogue just above mentioned but does not seem to be dated. Both are printed in the same style with the same kind of covers. The third catalogue entitled "A Wonderful Invention" does not seem to be dated. [94]

Complainant's counsel offers in evidence the three catalogues referred to and the same are marked "Complainant's Exhibits Hawthorne & Sheble Catalogues 1, 2 and 3."

Q. 91. Are you familiar with any aluminum horns made by the Hawthorne & Sheble Mfg. Co. and if so what was the construction of such horns?

A. I am familiar with such aluminum horns made by the Hawthorne & Sheble Company. Their construction was identical with the B and G horn except that aluminum was used instead of the steel or tin body and the brass bell. The body was made of one piece with a single seam and the spun bell was at-

(Deposition of Christian Krabbe.)

tached to the large end of the conical body. This style of horn is illustrated and described on page 12 of the Hawthorne & Sheble catalogue No. 2 and on page 8 of the Hawthorne & Sheble catalogue No. 3 just offered in evidence. I know of no other aluminum horns made by the Hawthorne & Sheble Manufacturing Company. They made an imitation aluminum horn called silveroid that was made in the same way that I have just described. They also made a horn having the body made of tin or steel with an aluminum spun bell, the horn and bell being constructed and assembled in the same manner as the B. and G. horn. These are the only horns of aluminum made by the Hawthorne and Sheble Company to my knowledge.

CHRISTIAN KRABBE.

Sworn to before me this 30 day of October, 1913.

[95]

**[Deposition of Edwin A. Merritt, for Complainant.]**

New York, October 30, 1913.

EDWIN A. MERRITT, being called as a witness for complainants and having first been duly sworn, deposes as follows in answer to questions by Mr. Duncan:

Q. 1. State your name, age, residence and occupation.

A. Edwin A. Merritt; 40 years old; salesman for Diamond Match Company; 650 West 177th Street, New York.

Q. 2. Were you at one time connected with the sale of phonograph supplies, and if so when did you first



(Deposition of Edwin A. Merritt.)

become connected with that business?

A. About 1889 or 1890, I became connected with the New York Phonograph Company and I remained with this concern about a year and then went into another line of business. In 1898 I went to the Edison Phonograph Company again and remained with it until they closed up their New York office. This was about two years later. I then entered the employ of the Douglas Phonograph Company, having offices at 22nd Street, New York City, and later at 89 Chambers Street. I remained with this concern for about three years and left them to go with the Bettini Phonograph Company located at Chambers Street. I entered the employ of the Bettini Phonograph Company in the early part of 1904. I remained with this company for about a year until they disbanded; then I went back to the Douglas Phonograph Company and remained with them until they disbanded about three years ago.

Q. 3. During the time you were in the employ of these various concerns what was their general line of business?

A. The New York Phonograph Company handled electric talking machines only, which they rented. These machines were made at the Edison factory and we rented these machines out for use. My duties with this concern included the assembling of machines and testing.

The National Phonograph Company at 26th Street and [96] Broadway with whom I next went was engaged in the selling of talking machines and sup-

(Deposition of Edwin A. Merritt.)

plies for talking machines made by the Edison Company, then known as the National Phonograph Company. The supplies referred to consisted of records, horns and repair parts, and other general paraphernalia going with talking machines. While with this company I was one of their salesmen and later on had charge of their retail record department.

The Douglas Phonograph Company with which I next went were general jobbers in the talking machine business. They were the largest jobbers of talking machines and talking machine supplies in the country. They handled the Edison, Xonophone and Victor Machines and all of the usual run of supplies. They handled supplies for all talking machines then on the market and handled them in large quantities. While with the Douglas Company I was one of the chief salesmen of the Douglas Company and was regularly consulted in regard to the purchase of supplies, this being my specialty in that business.

The Bettini Phonograph Company was also a general jobber of talking machines of all makes and of supplies of all makes. I was one of the salesmen of the Bettini Company. When I returned to the Douglas Company later on I assumed my old position.

Q. 4. During your experience with the several companies that you have above referred to how familiar did you come to be with the use of phonographs and talking machines and with the problems connected with the reproduction of sound by such machines?

A. That came up almost daily. That was a constant subject there—what we could do to get a better

(Deposition of Edwin A. Merritt.)

and clearer reproduction of a record. We were constantly on the lookout for all improvements that were put upon the market, either in the machines themselves, in the records, or in the speakers, or horns. I was called upon both when I was [97] assembling machines and also when I was the salesman and assisting in purchasing of supplies to test various new devices that were offered from time to time and to pass upon the desirability of these devices. I was also constantly called upon to make practical tests of talking machines and supplies for customers. In purchasing the supplies for Douglas & Co. I was regularly consulted as to the desirability of various new devices that were proposed from time to time.

Q. 5. To what extent did you come in contact during your employment with these various companies with the horns sold or supplied for use in connection with talking machines?

A. Constantly from the beginning of my experience up to the time I last left Douglas & Company, about three years ago.

Q. 6. Did you know Peter C. Nielsen, the patentee of letters patent No. 771,441 here in suit?

A. Yes, sir.

Q. 7. Did you have anything to do with Mr. Nielsen in connection with the taking out of this patent?

A. Yes, sir.

Q. 8. State what you had to do with Mr. Nielsen in reference to the taking out of this patent.

A. I went with Mr. Nielsen to Edgar Tait & Co., the patent attorneys, and helped Mr. Nielsen explain

(Deposition of Edwin A. Merritt.)

to the attorney whom we met there what his invention was and helped the attorney prepare the application papers. I should state that Mr. Nielsen was a Dane and talked English very imperfectly and understood English very imperfectly. I went along with him at his request to see that Nielsen made himself understood to the attorney who was to take out the patent.

Q. 9. Please state when it was that you went to Edgar Tait & Co. with Mr. Nielsen for the purpose just recited.

A. As near as I could tell about the latter part [98] of March, 1904; at any rate it was a few weeks before the application was filed and I see from a copy of the patent that the application was filed April 14, 1904.

Q. 10. With whom were you employed at the time you went with Mr. Nielsen to assist him in applying for his patent? A. Bettini Phonograph Company.

Q. 11. How long had you been employed with that concern when you accompanied Mr. Nielsen to Edgar Tait & Co.? A. About two or three weeks.

Q. 12. Had you known Mr. Nielsen prior to your employment with the Bettini Phonograph Company?

A. I had met him once before.

Q. 13. When and where, and under what circumstances?

A. About November, 1903, he came into the Douglas Phonograph Company and tried to get them to adopt his horn or take up the selling of it.

Q. 14. Did you talk with him at that time?

A. Yes. He had a finished horn there that he

(Deposition of Edwin A. Merritt.)

called the Lily horn at that time. He exhibited this horn to Mr. Loucks, the manager, who called me to come and examine it. I looked over the horn and Mr. Nielsen explained to me its construction and its desirable features.

Q. 15. State what was the construction of the horn that Mr. Nielsen showed Mr. Loucks and yourself in November, 1903, or thereabouts, while you were employed with Douglas & Company.

A. The points were the shape of the horn which he claimed would give a round, fuller tone, clearer tone, and the ribs which he claimed would take away the vibration of the horn.

Q. 16. What was the shape of the horn that Mr. Nielsen exhibited to you at the time referred to?

A. A flower or lily shape, or morning-glory shape. He called it the lily, and his horn really represented [99] the lily—the morning-glory or lily horn, which was afterwards known as the flower horn to give it a general name. The horn tapered gradually from the small end toward the big end, flaring much more rapidly as it approached the big end, the sides of the horn thus having a curved, rapidly-flaring contour like the morning-glory.

Q. 17. You have referred to the ribs mentioned by Mr. Nielsen; please describe the construction of the horn and the ribs that you have mentioned.

A. The horn was made up of a number of sections, each of which extended from the small end of the horn to the big end. The edges of these sections were turned up into flanges and the flanges were soldered



(Deposition of Edwin A. Merritt.)

together and thus formed a rib between each pair of sections.

Q. 18. Did Mr. Nielsen explain to you at that time anything in regard to the effect upon the sound reproduction of these sections joined together by ribs?

A. He did. He said that the use of the sections and the ribs broke the vibration of the horn and the shape gave it a round and fuller tone.

Q. 19. What was the result of Mr. Nielsen's interview with you and Mr. Loucks at the Douglas Phonograph Company's office about November, 1903?

A. Mr. Loucks did not feel sufficiently interested in this new article to take it up and said that he did not care to try on a new thing and interfere with the large horn business that we were doing. I told him and Nielsen that I thought there was a good deal in what Nielsen said and urged our purchasing a number of the horns and trying them out, but Mr. Loucks' views prevailed and the Douglas Company did not buy any of the horns at that time.

Q. 20. When you went with the Bettini Phonograph Company in March, 1904, did you then come in contact with Mr. Nielsen or his horns in any manner, and if so, what? [100]

A. When I went with the Bettini Company in March, 1904, I found on hand there a number of samples of the Nielsen horns and found that Mr. Nielsen had some time previous brought these horns to Mr. Miller, the manager, and Mr. Miller was in negotiation with Mr. Nielsen concerning them. I was at

(Deposition of Edwin A. Merritt.)

once brought in touch with Mr. Nielsen in regard to these horns.

Q. 21. What was the result of your interview with Mr. Nielsen in March, 1904, relative to his horn?

A. We were all very much impressed with the value of the Nielsen horns which we tested thoroughly and found that they did all that Nielsen said they would do. We made an arrangement with Nielsen for handling his horns and from that time on for some time we handled the Nielsen horns, paying him a royalty. I took the samples that Nielsen had left with the Bettini Phonograph Company and went on the road at once to secure orders.

Q. 22. Where did you go to secure the orders?

A. Philadelphia.

Q. 23. Whom did you interview in Philadelphia in regard to these Nielsen horns?

A. The Penn. Phonograph Company; Litt Bros. and all dealers and jobbers in talking machines I called upon there. I showed the sample horns generally to the trade in Philadelphia.

Q. 24. What further resulted from your interview with Mr. Nielsen in March, 1904?

A. Mr. Miller advised Mr. Nielsen that he should protect his invention by a patent and as I have already explained I therefore went with him to Edgar Tait & Company, on Broadway, New York, some time in March, 1904, and assisted Nielsen in explaining his invention so that a patent application was drawn and filed by him about the middle of April.

Q. 25. At the time that Mr. Nielsen brought the

(Deposition of Edwin A. Merritt.)

sample horn to the Douglas Phonograph Company, or at the time [101] when he brought the sample horns to the Bettini Phonograph Company and you had your talks with him there, under what name was he carrying on the business of making and selling these horns?

A. Under the name of "The Lily Phonograph Horn."

Q. 26. I show you a document and ask you if you can state what is is?

A. This is a receipt given by the Bettini Phonograph Company to the Lily Phonograph Horn for 35 horns. The receipt is dated December 22, 1904, and is signed by A. E. Stryker. Mr. Stryker was employed by the Bettini Phonograph Company at the time I was connected with that concern and I recognize this signature as his. I do not, of course, know personally of the purchase of these particular 35 horns on December 22, 1904, by the Bettini Phonograph Company, but there were a large number of Nielsen horns bought after I joined the Bettini Phonograph Company in March. I have seen the other billheads used by Peter C. Nielsen under the name of "The Lily Phonograph Horn," which billheads contained the same printed matter as the one that you now show me.

By Mr. DUNCAN.—Complainant's counsel offers in evidence the receipt just shown the witness and referred to by him in the last answer and the same is marked "Complainant's Exhibit Nielsen Billhead, December, 1904."

(Deposition of Edwin A. Merritt.)

Q. 27. Referring now to the horn exhibited to you by Mr. Nielsen in the office of the Douglas Phonograph Company in November, 1903, please state of what material that horn was made.

A. I believe it was made of zinc.

Q. 28. What was the finish of that horn?

A. It was painted.

Q. 29. Was the horn incomplete in any way, or was it fully finished?

A. It was entirely finished in every detail. [102]

Q. 30. Referring now to the Nielsen horns, that you found on hand when you entered the employ of Bettini Phonograph Company, please state of what material they were made?

A. I believe they were made of zinc, but as they were painted I cannot be sure as before long the horns were made of tin and I am not sure just when the change from zinc to tin was made. We got the horns from Nielsen fully finished and painted so that the material of which they were made could not easily be recognized.

Q. 31. How did they correspond in construction and in shape with the sample horn that Mr. Nielsen showed you while you were with the Douglas Company?

A. Exactly the same, both in shape and construction and size.

Q. 32. Under what name did the Bettini Phonograph Company put these horns on the market?

A. The lily horn, but they soon became known to the trade by the general name of flower horn, and

(Deposition of Edwin A. Merritt.)

when others began to make these horns in imitation of ours the general name by which they were known was the flower horn, and have been known ever since by that name.

Q. 33. Prior to the introduction of the Nielsen horn by the Bettini Phonograph Company had you become familiar with the shapes and general construction of horns previously used for phonographs?

A. Yes, sir, I had come very intimately in touch with phonograph supplies generally and with horns. I have already pointed out that Douglas Phonograph Company was the largest purchaser and jobber of phonograph supplies of all sorts in this country, and we were constantly on the lookout for all improvements and every manufacturer who got up a new article would bring it to the Douglas Phonograph Company almost, if not the first.

Q. 34. State generally what horns were used for phonographs prior to the end of the year 1903 or thereabouts. [103]

A. They were the straight funnel-shaped brass or black and gold horns.

Q. 35. What was the outer contour of the straight brass horn that you have just referred to?

A. These horns had a conical-shaped body with a straight outer contour until they nearly reached the big end. Then a flaring bell was attached to the end of the horn in some way.

Q. 36. What was the shape of the black and gold horn that you have referred to?

A. It was practically the same. It is practically



(Deposition of Edwin A. Merritt.)

the same as the brass horn I have just described. The black and gold horn is correctly illustrated in "Defendant's Exhibit for Identification Talking Machine Hawthorne & Sheble Advertisement in Talking Machine World, page 4 of February 15, 1905," which I now have before me. The illustration of the black and gold horn is that found at the right of the advertisement.

Q. 37. What was the common name for the black and gold horn?

A. It was known in the trade as the B. and G. horn and was named B. and G. for short for black and gold. The body was usually painted or enameled black and the bell portion was spun brass highly polished.

Q. 38. What was the method of construction of the B. and G. horn?

A. The body was made up of one sheet of steel or tin plate that was bent into the form of a cone and the edges fastened together and the spun brass bell was then fastened to the large end of the cone.

Q. 39. According to your own experience was there any difficulty with the tone reproduction of the record through the brass horn or the B. and G. horn that you have just described?

A. With both of these horns, namely, the brass [104] horn and the B. and G. horn I frequently noticed what we called the "blast," namely, a sudden swelling or confusion of sound. This blast or sudden or undesirable increase of sound would become apparent under various circumstances, as, for

(Deposition of Edwin A. Merritt.)

example, in particular with certain qualities of voice or on certain notes or with certain classes of instruments. This was so pronounced at times as to make very disagreeable results. This was due in part to defects in the records or in the production of the records, and for a number of years improvements were made in the records that tended to eliminate these confusion sounds and blasts, but in spite of all that could be done toward improving the records this blast continued to a certain extent because, as we afterwards found out, of the construction of the horns that were then in use. The idea was that prevalent throughout the phonograph trade prior to the introduction of the Nielsen horn was that the blast or other confusion of sound could be eliminated by making the horn as seamless as possible. The belief was that the presence of seams caused a rattling or vibration that interfered with the purity of certain tones, particularly of certain quality of voices and of certain instruments, and that the greatest purity of tone could be attained by making the horn seamless, and for this reason the brass horns were made without seams. In the small brass horns the entire horn was spun out of a single piece of metal; in the larger horns where the bells had to be made separately from the cones the two parts were spun separately and brazed together by a joint that was finished so as to be practically seamless.

In the B. and G. horn the horn was made with as few seams as the construction would allow. In spite of this elimination or attempted elimination of the

(Deposition of Edwin A. Merritt.)

seams we noticed the undesirable vibration that kept interfering with the purity of the tone reproduced from the records, and this difficulty was pronounced and interfered to a considerable extent [105] with the proper use of the records.

Q. 40. According to your own experience with the horns made by Mr. Nielsen, did such horns in any way effect the difficulty that you have already referred to in tone reproduction?

A. Yes, they did away with the difficulty I have referred to. Mr. Nielsen claimed to me when I first saw him in the fall of 1903 that by making up his horns in sections and joining them with ribs he could do away with the blast and undesirable vibrations that I have referred to, and my subsequent testing of these horns when I was with Bettini & Company and my subsequent use of these horns while with that company afterwards demonstrated the correctness of Mr. Nielsen's claims. I should add also that the correctness of his claims was shown by the universal adoption by the phonograph trade in 1904 of the sectional horn having the shape and construction of the Nielsen horn.

Q. 41. To what extent did the Nielsen horn go into use after it was brought to your attention by Mr. Nielsen in the fall of 1903.

A. As I have already stated in the early part of 1904 Bettini & Company made an arrangement to handle the horn and we handled the horn in large quantities. Almost immediately various horn manufacturers put upon the market a number of imita-

(Deposition of Edwin A. Merritt.)

tions of the Nielsen horn. These competing horns had the same shape as Nielsen's and were made up in the same manner of a number of flaring curved sections that were joined at their edges so as to form ribs. These horns were called the flower horns, following the designation given the horn by Mr. Nielsen himself. Some of the competitors called them morning-glory horns and some lily horns and *other* flower horns. By the latter part of 1904, or the early part of 1905, practically every horn manufacturer in the East, at any rate, was making this type of horn. They at [106] once superseded both the brass horn and the B. & G. horn as well as the paper horns that had previously been put upon the market in some quantity. At the time the Nielsen horn was introduced the phonograph machine companies were not supplying any large horn with their machines. The phonograph companies were supplying only a small conical reproducing horn, varying from 14 to 18 inches. There was a very widespread demand for larger horns running up as high as 48 inches, but these horns were not supplied by the phonograph machine companies. The public had to buy and did buy these horns in large quantities from jobbers and dealers who got them from concerns who made the horns specially. There was a very large business in the sale of these larger-sized horns after the Nielsen horn was introduced. Various manufacturers who had previously been making the larger-sized brass B. and G. horn above referred to took up the manufacture of flower horns. Among these concerns

(Deposition of Edwin A. Merritt.)

that put the flower horns upon the market in 1904 or early in 1905 were the Hawthorne & Sheble Mfg. Co. of Philadelphia, the Tea Tray Company of Newark, N. J., the Standard Metal Manufacturing Company of Newark, N. J., and several other concerns. The success of the flower horn was so marked, however, that within a short time the manufacturers of the phonographs themselves decided to give a larger horn with their equipment and themselves decided to adopt the flower horn. From that time on the flower became the regular standard equipment of the talking machine put out by the Edison, Victor, Xonophone and Columbia companies. The prices of the talking machines were raised by the manufacturers of such machines from \$2.50 to \$7.50 to cover the horn that was then supplied as part of the standard equipment. These talking-machine companies sold the machines and the horns under an agreement by which the jobbers and dealers were required to maintain certain resale prices in disposing of the machines. Under these agreements the jobbers and dealers could not buy the talking machines [107] without at the same time buying the flower horns as part of the standard equipment of those machines. The result was that most of the independent manufacturers of the flower horns were soon forced out of business and from that time on the flower-horn business was carried on by the talking-machine companies supplying the flower horns as part of the standard equipment as I have above pointed out.

Q. 42. Please compare the shape and construction



(Deposition of Edwin A. Merritt.)

of the flower horns that you say were introduced by the Hawthorne & Sheble Manufacturing Company, the Tea Tray Company, the Standard Metal Manufacturing Company and others in 1904 or 1905, and were later adopted and sold by the various talking machine companies as part of their equipment with the horn shown to you by Nielsen in the fall of 1903 and the Nielsen horns supplied to the Bettini Phonograph Company in the early part of 1904.

A. These flower horns as put upon the market by Hawthorne & Sheble, the Tea Tray Company and the other concerns mentioned in your question were of the same shape and were made in the same way as the Nielsen horn. The horns generally put upon the market were made of tin, which was also the case with the horns made by Nielsen for the Bettini Company except at the outset, and the ribs on the outside of the horns sold by the various manufacturers above referred to were usually made by folding the edges together into what is known as a tinsmith's seam, but this was the way in which Nielsen also made his horns for the Bettini Company except at the outset. The general shape and construction of the flower horn as put upon the market by the various manufacturers and talking-machine companies in 1904 and 1905 and succeeding years is shown in the exhibit I have already referred to, "Complainant's Exhibit for Identification Hawthorne & Sheble Advertisement, page 4, Talking Machine World, February 15, 1905." It is there illustrated as the silk-finish  
[108] horn which refers to the cloth covering that

(Deposition of Edwin A. Merritt.)

was placed upon the outside of the flower horn made by the Hawthorne & Sheble Manufacturing Company.

Q. 43. How did the trade and the public according to your experience and observation regard the flower horn as regards its tone and reproducing qualities?

A. They regarded it as superior in every way. It was found to give a rounder, fuller tone and eliminated a great deal of the metallic tone or vibration of the horn. Everybody agreed upon that. It was not only my opinion, but the customers, the small trade and the large dealers.

Q. 44. Can you produce any other advertisements of manufacturing companies supplying flower horns for talking machines?

A. I produce a photographic copy of page 30 of the Talking Machine World of December 15, 1907, containing an advertisement of the National Phonograph Co.'s new horn for the Edison Phonograph. This illustrates what I have already said in regard to the adoption of the new flower horn by talking-machine companies as part of their regular equipment. I also produce a photographic copy of the advertisement of the Federal Manufacturing Company of Cleveland, Ohio, advertising the Ideal horn, which advertisement appeared on page 14 of the Talking Machine World of May 15, 1908. I notice that this latter advertisement states, "Since the advent of the Phonograph, back in the eighties, it may safely be affirmed that no real progress has been made in the phonograph horn; its size has been grad-

(Deposition of Edwin A. Merritt.)

ually increased, thus merely accentuating the defects of the reproduction. At last, the "IDEAL" horn has come. A scientific device aiming at a pure, melodious reproduction of the sound, be it either a great soprano song, the endearment of a string instrument solo or the rendering of a Sousa march." This illustrates the statement that I have made in a recent answer to the effect that it was generally recognized that the [109] flower horn, because of its shape and construction gave a rounder and fuller tone, and eliminated those undesirable vibrations that caused the confused sounds and blasts particularly in connection with certain notes or certain quality of tones that cause a sympathetic response from the old metallic horn. It was found, as I have already said, that by dividing the horn up into sections that were fastened together by ribs and by giving it the flower shape these undesirable vibrations were eliminated.

I produce a photographic reproduction of page 10 of the Talking Machine World, containing an advertisement of the new Edison phonograph which corresponds with my statement made in a recent answer that the National Phonograph Company, maker of the Edison Phonograph, adopted the flower horn as a regular part of the equipment of its phonographs and made a price that included both the horn and the phonograph. This advertisement states that the "big appropriate properly proportioned horn has received such a welcome from the trade. The horn goes with the phonograph. The price includes both.

(Deposition of Edwin A. Merritt.)

There is a good profit in it. The new horn puts the phonograph at its best, satisfies every purchaser, makes a stock of horns unnecessary, and makes price cutting impossible."

Q. 45. About how long did the Bettini Company continue handling the horns made by Mr. Nielsen?

A. I think until the end of 1904 or the first month or two in 1905.

Q. 46. Why did the Bettini Company cease handling the Nielsen horn at or about the time you mention?

A. Because so many other companies had entered upon the manufacture of horns substantially identical with Nielsen's in such large quantity that they were offering them at prices lower than Nielsen's. The big companies that took up the manufacture of these horns were also able to turn [110] them out in larger quantities and with better finish than Mr. Nielsen. These, I believe, were the reasons why we felt compelled to buy our flower horns elsewhere pending Mr. Nielsen's establishment of his patent rights in the courts. I should also add that Mr. Andrew Andraesen, who was connected with Mr. Nielsen in the manufacture of the Nielsen horn under the name of Lily Phonograph Horn, got into some kind of a disagreement with Mr. Nielsen and started to make horns for himself; Mr. Andraesen joined with two men named Senne and Petersen, Mr. Senne being the son-in-law of Mr. Petersen and formed the Nova Phonograph Company, which started to make the Nielsen tin horns. It was difficult to do business

(Deposition of Edwin A. Merritt.)

with Mr. Nielsen because of his inability to understand or speak English well and his unfamiliarity with business methods in general. He was also without means and was unable to protect his patent right.

Q. 48. Prior to your connection with the Bettini Phonograph company in the early part of 1904 were you familiar with the horns made and sold by the Hawthorne & Sheble Mfg. Co. of Philadelphia.

A. I was. In the course of my duties I became thoroughly familiar with the Hawthorne & Sheble product in horns. Mr. Hawthorne was a regular visitor at the Douglas Company, seeking to sell horns or any other product that they manufactured.

Q. 49. Were you familiar with the B. and G. horn as put upon the market by the Hawthorne & Sheble Mfg. Company prior to March, 1904?

A. I was. That horn was the same as the regular B. & G. horn except that toward the end of 1903 some of these B. & G. horns made by the Hawthorne & Sheble Mfg. Company were covered with a cloth finish. The construction was the same as the B. & G. horn, but they had a special name given them by the Hawthorne & Sheble Company. [111]

Q. 50. Were you familiar with the all-brass horn sold by Hawthorne & Sheble Company prior to the early part of 1904?

A. Yes. We did not handle these brass horns and because they were in our opinion of inferior grade to those that we got outside from the Standard Metal or Tea Tray Company, but the Hawthorne & Sheble all-brass horns with which I was then familiar were



(Deposition of Edwin A. Merritt.)

of the same construction as the other all-brass horns made by these other concerns.

Q. 51. Were you familiar with any aluminum horns made by the Hawthorne & Sheble Mfg. Co. prior to March, 1904?

A. Yes; they made a horn that had a spun aluminum bell and the body made of aluminum. The construction and shape was identical with the B. and G. horn. The body was made of a single piece of aluminum that was bent into the shape of a cone and the edges fastened together with a proper seam. To the large end of this cone the spun aluminum bell was fastened. This horn proved of no value and we destroyed what we had left.

Q. 52. Did the Hawthorne & Sheble Mfg. Company ever to your knowledge offer upon the market prior to 1904 a horn of the flower shape having longitudinal ribs on the outside of the horn?

A. No, sir.

Q. 53. Did the Hawthorne & Sheble Mfg. Company ever offer to Douglas & Company during the year 1903 or at any time prior thereto an aluminum horn made of tapering longitudinal sections extending from the small end to the big end of the horn and joined together with seams?

A. Never, to my knowledge, while I was connected with that company. I was so closely in contact with the purchasing of the material that I am sure I would have known if any such horn had been offered the Douglas Phonograph Company. Indeed, my acquaintance with the trade and with the [112]

(Deposition of Edwin A. Merritt.)

product of the Hawthorne & Sheble Co. was such that I am sure that if they offered any such horn for sale I would have known of it.

Q. 54. Did the Hawthorne & Sheble Mfg. Company offer to the Douglas Phonograph Company during the fall of 1903 any flower-shaped horn made of longitudinal steel sections extending from the small end to the large end of the horn and joined together at their edges?

A. They did not. I was closely connected with the purchasing end of the Douglas Phonograph Company during the latter part of 1903 and would have known if any such horn had been offered. In view of the fact that in the fall of 1903 Mr. Nielsen brought his horn to me and I was very much interested in it, I am sure that if any similar horn had been offered to Douglas & Company I would have known of it and would recollect the occurrence. No such horn was offered to my knowledge.

By Mr. DUNCAN.—Complainant's counsel offers in evidence Photographic reproductions of page 30 of the Talking Machine Company of Dec. 15, 1907, which is marked "Edison Advertisement of Flower Horn"; page 10 of "Talking Machine World," which is marked "Second Edison Advertisement," and page 14 of the Talking Machine World of May 15, 1908, which is marked "Federal Advertisement of Flower Horn."

Q. 55. I show you plaintiff's exhibit for identification, page 18, of the Talking Machine World of January 15, 1905, containing an article entitled "A

(Deposition of Edwin A. Merritt.)

great Supply House.” Please read this article so far as it applies to the flower horn and state whether it corresponds with the facts as they were within your knowledge on or about the 15th of January, 1905?

A. I have read the article in question. As I have already indicated, the Hawthorne & Sheble Mfg. Company was one [113] of the concerns that put the so-called flower horn upon the market some time in 1904. I came in contact with it, I think, about the beginning of the summer of 1904, but it came upon the market in considerable quantity toward the end of that year. Prior to 1904 I know of no flower horn made by the Hawthorne & Sheble Mfg. Co. or by any other concern or person than Nielsen. The article in question is correct in that it speaks of the flower horn as the latest product in the horn line of the Hawthorne & Sheble Mfg. Co. The article is also correct in stating that these flower horns present a handsome and attractive appearance and are brilliant and clear in reproducing.

By Mr. DUNCAN.—Complainant’s counsel offers in evidence the exhibit in question heretofore marked for identification and the same is now marked “Complainant’s Exhibit Hawthorne & Sheble Descriptive Article of January 15, 1905.”

Complainant’s counsel also offers in evidence the exhibit heretofore marked for identification as “Hawthorne & Sheble Advertisement of January 15, 1905,” and the same is now marked “Complain-

(Deposition of Edwin A. Merritt.)

ant's Exhibit Hawthorne & Sheble Advertisement of Jan. 15, 1905."

Q. 56. Are you familiar with the book entitled "A Complete Manuel of the Edison Photograph," written by George E. Tewksbury?

A. Yes, I am familiar with that book. We sold many copies of this book when I was connected with the National Phonograph Company at 26th Street and Broadway, at which time the National Phonograph Company was selling the Edison Phonograph. The book in question was published by the United States Phonograph Company of Newark, N. J., in 1897. It was written by George E. Tewksbury, who was closely connected with Mr. Edison's work with the phonograph and contained an introduction by Mr. Edison himself.

Q. 57. Can you produce a copy of the book referred to? [114]

Q. I can and here produce it. This is the same publication that as I have just stated the National Phonograph Company was selling when I was with that concern.

Q. 58. I note that the chapter entitled "Horns and Tubes" opens with the statement "In this chapter we do not expect to say all there is to say about horns or to say the last word about horns, for the last word has not yet been spoken. The horn is still in its experimental stage, although certain definite results have been accomplished and certain facts are known." Please state whether this corresponds with your experience and knowledge as to the horns

(Deposition of Edwin A. Merritt.)

when you were with the National Phonograph Company.

A. It does; the horn at that time was in so experimental a stage that, as I have already pointed out, the talking-machine companies did not supply any large-sized horn as part of the equipment, but only a small horn 14 inches or so in length.

Q. 59. The chapter also goes on to say that "It would astonish the casual reader to learn of the number and thoroughness of the experiments in that direction. Mr. Edison has himself tried a vast number of sizes and shapes out of all sorts of material. Other experimentalists and enthusiasts have gone over the same ground and passed into new paths. They all have come back to the main traveled road, wood, iron, steel, zinc, copper, brass, tin, aluminum, metal, German silver have been tried. Glass, too, and hard rubber. Papier-maché and probably every other product that nature yields or man contrives. The latitude as to form and shape being greater than the resources in material there have been almost innumerable attempts in that line. After all of which it may be said that tin and brass, defective as they are, have been settled upon as the most available, and the forms now known in the trade as the most desirable. Any horn to be good must come out [115] of sound metal and be perfectly joined. Ordinary joining will not do and imperfect metal is a delusion." Please state to what extent the statements just quoted correspond with your own experience and knowledge in the beginning of 1904.



(Deposition of Edwin A. Merritt.)

A. It is true that various materials were tried in the manufacture of horns and it is also true that tin and brass have been settled upon as the most available. Glass was tried prior to 1904 and other materials mentioned in the article. The glass horns proved unsatisfactory, first, because of liability to breakage and also because of the occurrence of undesirable vibrations that interfered with the clear reproduction of the record. Papier-mache horns tended to deaden the sound and prevent what we call a live reproduction.

It is also true that various forms of horns were experimented with prior to 1904. The form of horn finally adopted, whether made of tin or brass was the form shown in the B. & G. horn, an illustration of which I have already pointed out in one of the Hawthorne & Sheble advertisements. Whatever other forms of horns may have been experimented with no horn having the shape of the metal horns put upon the market by Nielsen in the end of 1903 and by his competitors in 1904 and succeeding years and known as the flower horn, had previously been put upon the market. The article quoted speaks of tin and brass as being defective. This was true in certain respects as to the tin and brass horns prior to Nielsen, because those horns were so made that they caused the counter vibrations and interfering tones that prevented the clear reproduction of the record. After the invention of the Nielsen horn, however, the use of tin and brass was not open to this objection and thereafter tin and brass could not properly be described

(Deposition of Edwin A. Merritt.)

as defective for use in horns. The article also says that any horn to be good must come out of sound metal and be perfectly joined, and adds that ordinary [116] joining will not do. This corresponds with what I have already pointed out that in the trade prior to Nielsen it was believed desirable that a metal horn should be made as seamless as possible, the universal idea being that if you could get a perfectly seamless horn the tone production would be better and I suppose that it is what the writer meant when he said in the article above quoted that the horn in order to be good must be perfectly joined. As a matter of fact, it was demonstrated by the Nielsen horn that the tone reproduction would be very much better by cutting the horn up into a number of sections that were joined together with ribs so that these sections would break up and prevent the counter vibrations that occurred in the seamless glass horns and the seamless brass or other horns.

I notice at page 74 of the chapter on "Horns and Tubes" in the Tewksbury book a statement that "Recording-horns are often bound with adhesive tape to check vibration and to make the tones of bass instruments more natural or to give a ring to the bass register of a piano." This corresponds with what I have already said and indicates a recognition that the horns referred to by the writer had an undesirable vibration that Mr. Edison and others sought to prevent by binding the horns with adhesive tape or rattan.

Q. 60. Please examine the cut that appears on page

(Deposition of Edwin A. Merritt.)

70 of the book entitled "A complete Manual of the Edison Phonograph" that you have produced and state how that illustration compares with your knowledge of the construction and shape of horns in 1903 just prior to your acquaintance with the Nielsen horn?

A. This illustration very fairly represents the development of phonograph horns in 1898. In 1903 there was no substantial difference. The only horn used in 1903 prior to Nielsen does not seem to be expressly illustrated in the cut on page 70 of the book referred to, viz., the B. & G. horn. The sixth horn from the right of the cut in question [117] is evidently an all brass horn that more or less approximates the construction of the B. & G. horn. The B. & G. horn is properly illustrated in the Hawthorne & Sheble advertisement of January 15, 1905. The horns of the same construction as the B. & G. were made with aluminum bodies and aluminum bells and also with tin bodies and aluminum bells. The phrase "B. & G.," as I have already stated, was simply an abbreviation of the name "Black and Gold" and that was adopted because after a while the body of this horn came to be painted with or enamelled black and the bell made of polished spun brass. The same shape of horn of course was made of brass throughout in some instances and of other colors and other metals, with the exception of the particular shape of the B. & G. horn, which, however, is closely approximated in the sixth horn from the right in the cut on page 70 that cut shows the condition of the horn

(Deposition of Edwin A. Merritt.)  
development in 1903 before Nielsen. Some of the horns shown in this cut are wrapped with tape or rattan or something else in an endeavor to offset the undesirable vibration.

By Mr. DUNCAN.—The book produced by the witness is offered in evidence and marked "Complainant's Exhibit Manual of the Edison Phonograph of 1897."

Deposition closed.

EDWIN A. MERRITT. [118]  
Office of Duncan & Duncan.

October 31, 1913.

Met pursuant to adjournment.

Present: JESSIE B. KAY, Notary Public.

FREDERICK S. DUNCAN, Counsel for  
Complainant.

[Deposition of William H. Locke, Jr., for  
Complainant.

WILLIAM H. LOCKE, Jr., being produced as a witness for complainant, having first been duly sworn, deposes as follows in answer to questions by Mr. Duncan:

Q. 1. State your name, age, residence and occupation.

A. William H. Locke, Jr., Mount Vernon, New York; 53; occupation, I am president of the Searchlight Horn Company, complainant, and am engaged in the real estate business.

Q. 2. Under the laws of what state was the Searchlight Horn Company incorporated?

A. The Searchlight Horn Company was incorpo-

(Deposition of William H. Locke, Jr.)

rated under the laws of the State of New York.

Q. 3. Did the Searchlight Horn Company at any time obtain title to the Nielsen patent 714,441?

A. Yes, they did.

Q. 4. Can you produce the instrument by which the Searchlight Horn Company obtained title to said patent?

A. Yes, I here produce the original document.

The witness produces the document heretofore offered in evidence in connection with the testimony of Mr. Krabbe and marked "Complainant's Exhibit United States Horn Company—Searchlight Horn Company assignment January 4, 1907."

Q. 5. Do you know the signatures that appear at the foot of this document, and did you see those signatures made?

A. I know the signatures and I saw them made. [119] Mr. Alexander K. Winter I knew to be president of the United States Horn Company and Mr. John C. De Graw to be its secretary. I was at that time a stockholder and director of the United States Horn Company. The signatures of Alexander K. Winter and John C. Degraw appearing at the foot of the document referred to are the genuine signatures of those gentlemen and I saw them sign the same. The signatures W. H. Locke, Jr., appearing at the foot of said document as president of the Searchlight Horn Company is my own signature and the signature of Charles Percy Bogert is the genuine signature of a gentleman of that name who was secretary of the Searchlight Horn Company. I was



(Deposition of William H. Locke, Jr.)

present when all of the gentlemen referred to signed the document in question when it was delivered by the United States Horn Company to the Searchlight Horn Company. It has been in my possession since that time.

Complainant's counsel again offers the document in question in evidence and the same is marked "Complainant's Exhibit United States Horn Company-Searchlight Horn Company Assignment of January 4, 1907."

Q. 6. How long were you connected with the United States Horn Company?

A. Ever since it was incorporated in the early part of 1905. I was a stockholder and during most of the time I was a director and officer. I am still the treasurer of that company.

Q. 7. Was the United States Horn Company at any time the owner of the Nielsen patent here in suit, and if so by virtue of what document or documents?

A. By virtue of two assignments to said company, one from myself bearing date February 24, 1905, conveying my half interest in said letters patent 771,441, the original of which assignment I now produce and also of an assignment from Christian Krabbe to the United States Horn Company, [120] dated February 24, 1905, conveying his half interest in said patent to said company. I have here a certified copy of the assignment from Mr. Krabbe to the United States Horn Company.

The documents referred to by the witness are the documents that have previously been offered in evi-

(Deposition of William H. Locke, Jr.)

dence by complainant in connection with deposition of Christian Krabbe and that are marked respectively "Complainant's Exhibit Locke-United States Horn Company Assignment of February 24, 1905," and "Complainant's Exhibit Certified Copy Krabbe-United States Horn Company Assignment, February 24, 1905."

Q. 8. Please state whose signature appears at the foot of the document marked "Complainant's Exhibit Locke-United States Horn Company Assignment of February 24, 1905."

A. That is my own signature that I placed at the foot of this document just prior to my delivering the same to the United States Horn Company at the same time Mr. Krabbe signed and delivered his assignment that I have just referred to.

Q. 9. Where is the original assignment from Mr. Krabbe to the United States Horn Company of which Complainant's Exhibit Certified Copy of Krabbe-United States Horn Company Assignment of February 24, 1905," is a copy?

A. I don't know. It should be among the papers of the United States Horn Company or of the Searchlight-Horn Company, but I have made repeated searches to find this document and have been unable to locate it. It must have been lost in some way.

Q. 10. Were you present when Mr. Krabbe signed his original assignment of February 24, 1905, to the United States Horn Company? [121]

A. I was present and I saw him sign and deliver

(Deposition of William H. Locke, Jr.)

the original assignment. My signing and delivering my assignment and his signing and delivering his was part of the same transaction, the purpose being for us to vest the entire title to the Nielsen Patent in the United States Horn Company by reason of our assignments.

Q. 11. In what way did you get the interest in the Nielsen Patent now in suit that you conveyed to the United States Horn Company by your assignment of February 24, 1905?

A. By an assignment from Christian Krabbe to myself dated February 14, 1905, the original of which I produce and which I note is marked "Complainant's Exhibit Krabbe-Locke Assignment of February 14, 1905." The signature at the foot of this document is the genuine signature of Mr. Krabbe.

Q. 12. When did you first meet Mr. Krabbe?

A. Shortly before Christmas in 1904 I was passing his store in Brooklyn and saw a model of a boat in his window that I thought would be a good Christmas present for one of my boys. I went in there and met Mr. Krabbe and while I was looking about at the things in the store I saw a new style of phonograph horn.

Q. 13. What style of horn do you refer to?

A. It was this flower horn. It was a new shape to me. I talked with Mr. Krabbe about the horn and understood that he owned or controlled the patent.

Q. 14. Previous to this time had you been familiar with the phonograph horns on the market?

A. I had not used the phonograph myself, but had

(Deposition of William H. Locke, Jr.)

noticed in a general way the horns that had previously been used. The only horns that I had seen used before this time were the little short horns that were supplied with phonographs or the larger horns that were known by the trade as the B. and G. horn.

Q. 15. Can you produce one of these B. and G. horns? [122]

A. I did produce one when I was a witness in the case of Searchlight Horn Company against Sherman, Clay & Company in the United States District Court, Northern District of California, Second Division, that came to trial in October 1912. The B. and G. horn that I then produced was offered in evidence as "Plaintiff's Exhibit No. 8." The horn was left with the Clerk of the Court and I understand is still an exhibit in that case.

Complainant's counsel offers in evidence the B. and G. horn referred to by the witness that was offered as "Plaintiff's Exhibit No. 8" in the Sherman, Clay & Co. action and the same is marked "Complainant's Exhibit B. & G. horn."

Q. 16. After you talked with Mr. Krabbe in regard to the horn that you saw in his store shortly before Christmas, 1904, did you make some arrangement with Mr. Krabbe in regard to manufacturing and selling this horn?

A. Yes, early in 1905 I bought a half interest in the Nielsen Patent that had then been acquired by Mr. Krabbe and he and I formed the United States Horn Company which went ahead with the manufac-

(Deposition of William H. Locke, Jr.)

ture and sale of these horns.

Q. 17. What kind of horns did the United States Horn Company make?

A. The so-called flower horn.

Q. 18. Can you produce one or more of these flower horns made by the United States Horn Company?

A. Mr. Krabbe, who was a witness in the Sherman, Clay & Co. case that I just referred to, produced two of these horns and they were put in evidence in that suit and marked "Plaintiff's Exhibits 10 and 11."

Q. 19. At the time you became interested in the Nielsen horn in what way was the horn business being carried on generally?

A. The talking-machine companies were supplying a short conical horn varying from 16 to 20 inches or so in length including the bell at the large end of the [123] horn, as part of the equipment of the machine. Most people, however, wanted larger horns which they had to buy from dealers and jobbers generally who got them from independent horn manufacturers. The B. & G. Horn that I have spoken of was the popular and practically the only large horn that was being sold just before the Nielsen horn came into use. The B. & G. horn was made by three or four companies including the Tea Tray of Newark, N. J., the Hawthorne & Sheble Mfg. Company of Philadelphia, Pa., and the Standard Metal Manufacturing Company of Newark, N. J. These three companies sold large quantities



(Deposition of William H. Locke, Jr.)

of the B. and G. horn. Very shortly after I got my interest in the Nielsen horn, or possibly just about that time, these three companies and a number of others started in making the flower horn and soon began to sell that horn in as large quantities as they had previously sold the B. and G. horn. The so-called flower horn created a furore and practically did away with the B. & G. horn. All new trade was in the flower horn and many people who had previously equipped their machines with the B. and G. horn discarded them and bought the flower horn.

Q. 20. What do you mean by the phrase "flower horn"?

A. It was a term first used by Nielsen to describe his horn which had the appearance of a morning-glory or lily. For a while he called his horn the lily horn and sometimes it was called the morning-glory horn, or flower horn, and when the trade generally began to take it up it soon became known as the flower horn.

Q. 21. To what extent did the flower horn business develop during 1905 or succeeding years?

A. Not only did the large manufacturers who had previously been making the B. & G. horn take up the flower horn and make and sell it in place of the B. & G., but a large number of smaller concerns started up making the flower horn. In fact I discovered after I had gotten [124] into the business that some of the manufacturers had started making the flower horn in a small way in the summer of 1904 or

(Deposition of William H. Locke, Jr.)

thereabouts a few months after Nielsen had succeeded in getting his horn on the market in considerable quantities. The flower horn business increased very rapidly during 1905 and 1906 and the horn became recognized by the trade and by the public as so satisfactory that before long the talking-machine companies themselves adopted the flower horn as a part of the standard equipment of their talking machines, discarding the small, cheap horn that they had previously been supplying, adding to the former price of the machines an additional amount varying from \$2.50 to \$7.50 to cover the varying sizes of the horns. The talking-machine companies sold their machines under license agreements with their jobbers and dealers by which the jobbers and dealers had to purchase the entire equipment and had to maintain fixed prices in reselling the same, and the result was that the jobbers and dealers were thereafter compelled to buy the flower horns from the talking-machine companies as part of the equipment of the talking machines. This made it impossible for the independent manufactures of the flower horns to continue making the same, except, of course, those who made contracts with the talking-machine companies to supply them with the flower horns.

The flower horn continued to be practically the only form of horn used with talking-machines down to the time when the cabinet machine came into use which utilizes a smaller sound producer that is concealed in the cabinet.

(Deposition of William H. Locke, Jr.)

Q. 22. After the formation of the United States Horn Company what did that concern do toward manufacturing and selling the Nielsen flower horn?

A. It manufactured several thousands of the horns and we started putting them upon the market. Mr. Krabbe [125] was the active man in the company so far as selling the horns was concerned. Nielsen worked in the factory having charge of the building of the horns.

Q. 23. How long did Nielsen remain with the United States Horn Company?

A. Some six months or so. He then complained of trouble with his eyes and left suddenly for Denmark which was his old home. He was heard of in Denmark a year or so after, but since that time I have heard nothing further as to his whereabouts. I have endeavored to locate him in Denmark, but cannot do so.

Q. 24. What was the construction of the horns that the United States Horn Company made while Nielsen was with it?

A. They were of the same shape and construction as the horn that I first saw at Mr. Krabbe's store. There were a few horns made with the L-shape and butt seam, but most of the horns, and I think practically all of the horns, that were made at the factory on Broadway and Brooklyn were made with the lock seam.

Q. 25. Describe the shape and construction of the horns that the United States Horn Company made and sold.

(Deposition of William H. Locke, Jr.)

A. They were of the flower shape—shaped like a morning-glory, tapering gradually from the small end of the horn to the big end, near which big end, however, the horn flared much more rapidly. The sides of the horn were curved outwards toward the big end. The horn was made up of a number of curved strips of tin, the edges of which were joined together in a few instances by the butt seam, but in most cases by the lock seam.

Adjourned to Saturday, November 1, 1913, at 10 A. M. [126]

Office of Duncan & Duncan.

November 1, 1913.

Met pursuant to adjournment.

Present: Same as before.

Direct Examination Continued.

Q. 26. Describe the shape of each of these strips or sections that were used in making these horns.

A. Each section was small at one end and considerably larger at the other end. The side curved from the small end to the large end of the section. The large end of the section itself had a curved contour. Each section when in place in the horn extended from the small end of the horn to the large end.

Q. 27. What efforts were made by the United States Horn Company to notify the trade of your rights under the Nielsen Patent and to protect those rights?

A. We marked each one of our horns with the word "Patented" and the date of the patent. Our

(Deposition of William H. Locke, Jr.)

advertising matter stated that we were the owners of the Nielsen Patent. Notifications were also sent to various companies manufacturing the flower horns and early in 1906, I, myself called upon several concerns that were manufacturing these flower horns, including all or practically all of the principal concerns. I called on Hawthorne & Sheble Mfg. Co., in February, 1906, and also about the same time, I called upon Mr. Lawrence, president of the Standard Metal Mfg. Company and Mr. Martan, president of the Tea Tray Company, and also met Mr. Conger, treasurer or secretary of that company. Mr. Krabbe had also called upon various concerns and we always notified them of our ownership of the patent and requested them to cease infringing. Our attorney, Mr. Burnham C. Stickney also notified various companies, including the Eclipse Phonograph Company, Hoboken, [127] New Jersey; Messrs. Geller Brothers, 275 West Cheney Street, Newark, N. J., the Tea Tray Company, Newark, N. J.; New Jersey Sheet Metal Company, Newark, N. J.; Standard Metal Mfg. Co. Newark, N. J.; Columbia Phonograph Company, New York City; Hawthorne & Sheble Manufacturing Company, Philadelphia, Pa. I also called on the Victor Talking Machine Company and met their manager, Mr. Geisler, the National Phonograph Company and Columbia Phonograph.

Q. 28. What response did these various concerns upon whom you called or whom you notified make



(Deposition of William H. Locke, Jr.)

to your request that they cease infringing the Nielsen Patent?

A. Each one stated that too many concerns were making these flower horns to warrant it being the first to acknowledge the patent and cease infringement. The invariable response was that if we would stop the infringement by the other the particular one I was talking to would stop. In effect they decline to pay any attention to us until we had fought the case out in the courts.

Q. 29. What did your company do in regard to commencing suits under this patent?

A. The United States Horn Company was succeeded after a short time by the Searchlight Horn Company, the present owner of the Nielsen Patent. Neither the United States Horn Company nor the Searchlight Horn Company had any spare capital other than that was needed immediately for making horns. Together we made between 35,000 and 40,000 horns. We met with considerable difficulty in disposing of these horns because of the widespread infringement carried by so many big companies. We tried to get a footing on the market by introducing a slight modification into the horn, but it was not successful as all of the horns were practically the same, all of them being built along the lines of the Nielsen horn. We were unable to make substantial progress in our business and when the talking-machine [128] companies themselves adopted the flower horn as part of their equipment, such action on their part destroyed the market

(Deposition of William H. Locke, Jr.)

for independent horns and we were therefore forced out of business. Up to that time we had no spare money that would justify us in going into litigation with the big companies that were infringing our patent. We consulted attorneys and they told us it would cost a great many thousands of dollars to fight a suit through to the finish because the great manufacturing companies were very powerful and would oppose us in every way. We made efforts to get money together for this purpose, but were not successful. We also made efforts to persuade some of these big horn manufacturers to take licenses or to enter into some arrangement by which the horn could be made under the patent. No one company was ready to act in advance of the others and the infringement was too widespread to permit of our succeeding with our negotiations. As a result we were unable to do anything in the way of litigation, except that we did bring a suit against Camillus Senne and Peter E. Peterson, doing business under the name of Nova Phonograph Horn Co. This suit was brought by the United States Horn Company in the United States Circuit Court, Southern District of New York, early in 1905. Associated with Peterson and Senne in the Nova Phonograph Horn business was Andrew Andraesen who had formerly been employed as a salesman by Nielsen. Senne and Peterson were making the same kind of a metal horn that Nielsen and the United States Horn Company were making. They were making this metal horn before the Nielsen pat-

(Deposition of William H. Locke, Jr.)

ent issued and declined to stop making the same, but after the patent had issued they allowed judgment to go against them in the suit that we brought and stopped making the metal horn. Afterwards they made a horn of paper in accordance with a patent granted to Senne.

Q. 30. When was it that the Searchlight Horn Company [129] discontinued its business in making and selling horns?

A. That was in May, 1908.

Q. 31. At or about that time did you or your company endeavor to make any arrangement with the talking-machine companies in regard to your Nielsen patent?

A. Yes, I, myself tried to induce various talking-machine companies, among them the National Phonograph Company, to make arrangements with the Searchlight Horn Company for the payment of a royalty for the use by them of the horns containing the invention. I had already notified them that the horns that they were having made and were selling were an infringement upon the Nielsen patent. The Searchlight Horn Company also endeavored to sell and *offer* to sell said patent to the phonograph companies, among them the National Phonograph Company. These negotiations were carried on for a considerable period of time until September, 1909, when I was informed by the National Phonograph Company that no arrangement would be made with us for the purchase of said patents. Thereafter the National Phonograph

(Deposition of William H. Locke, Jr.)

Company continued to infringe the Nielsen Patent in defiance of our rights and the other talking-machine companies adopted the same attitude.

Q. 32. What, then, if anything, did you do toward enforcing your rights?

A. It was late in 1909, when we realized that we could do nothing by negotiation with the phonograph or talking-machine companies and that it would be necessary to bring suit if we were going to get anything out of our patent. I interviewed a number of attorneys and endeavored to secure the services of a patent lawyer, but by reason of the fact that the Searchlight Horn Company was largely in debt and was in financial trouble, I was unable for a long time to secure an attorney. I was told in each case that it would take a great deal of money to fight these big talking-machine companies and the Searchlight Horn Company was without [130] means to engage in so expensive a litigation. In April, 1910, I was introduced to Mr. John H. Miller, an attorney of San Francisco, then in New York, by a mutual friend. He agreed to make a thorough investigation of the matter and if after such investigation he considered the Searchlight Horn Company had a good case he would undertake the suit. Mr. Miller did make an extensive investigation and at various times witnessed actual demonstrations and experiment with various styles of horns. All this took considerable time. Mr. Miller then returned to San Francisco and early in 1911, commenced an action against Sherman,

(Deposition of William H. Locke, Jr.)

Clay & Co., in the United States District Court, Northern District of California, Second Division. This concern was the Pacific Coast distributor of the Victor Talking-Machine Company. That case came to trial before Judge Van Fleet and a jury in October, 1912, and resulted in a judgment in favor of the Searchlight Horn Company sustaining the validity of the Nielsen patent and awarding damages. I was present at the trial of said case and testified on behalf of the plaintiff. After the entry of the judgment I had personal conferences in New York with representatives of Thomas A. Edison, Inc., the successor of the National Phonograph Company, for settlement of their infringement with the idea of avoiding litigation. We were not able, however, to effect a settlement and in March, 1913, the Searchlight Horn Company began suit in equity in San Francisco against Babson Brothers, Incorporated, and later against the Pacific Phonograph Company, these concerns being respectively dealers and distributors on the Pacific Coast of the Edison Phonograph horns. These two suits were joined and preliminary injunctions were granted in that some time ago. I understand that these are the suits in which I am now testifying.

Q. 33. What steps, if any, did the Searchlight Horn Company take to notify the trade of its ownership of the Nielsen patent and of the infringement by that patent on [131] the part of the manufacturers of the flower horn?



(Deposition of William H. Locke, Jr.)

A. I have already stated my personal interviews with various manufacturers of horns and with the phonograph or talking-machine companies. I was acting as an officer of the Searchlight Horn Company in these matters after the early part of 1907. The Searchlight Company's horns were also stamped with the usual patent notice under the Nielsen patent and the Searchlight Horn Company sent circulars to the entire jobbing trade throughout the United States notifying it of our ownership of the Nielsen patent.

Q.34. Can you produce any catalogues of talking-machine companies issued for the season of 1905, illustrating the horns at that time contemplated by the talking-machine manufacturers for use with their machines?

A. Yes, I produce the Victor catalogue evidently issued in the summer of 1904. This shows the B. & G. horn that I have previously testified about. A short time after this date the B. & G. horn was practically superseded by the flower horn.

Complainant's counsel offers in evidence the Victor catalogue produced by the witness and the same is marked "Complainant's Exhibit Victor Catalogue 1904".

Q.35. Will you produce a certified copy of the certificate of incorporation of the Searchlight Horn Company

A. I produce the same.

Complainant's counsel offers in evidence the certified copy of the certificate of incorporation of the

(Deposition of William H. Locke, Jr.)

Searchlight Horn Company just produced by the witness and the same is marked "Complainant's Exhibit Certified Copy of Certificate of Incorporation of the Searchlight Horn Company.

Q. 36. Can you produce any Hawthorne & Sheble Mfg. Co. price lists or catalogues other than those you have already produced? [132]

A. I have here the confidential trade price list No. 50 of Hawthorne & Sheble Mfg. Co. covering talking machine supplies for 1905-1906; also confidential dealer's trade price list No. 40 for the season 1906-1907; also talking catalogue No. 600 of the Hawthorne & Sheble Mfg. Co. covering talking machine supplies. These publications were issued and circulated through the trade by the Hawthorne & Sheble Mfg. Co. and came into my possession in that way.

Complainant's counsel offers in evidence the documents in question and the same are marked respectively "Complainant's Exhibit Hawthorne & Sheble Price List 1905-1906; Hawthorne & Sheble Price List 1906-1907 and Hawthorne & Sheble Catalogue No. 600."

Complainant's counsel offers in evidence a copy of patent to H. Sheble assigned to the Hawthorne & Sheble Mfg. Co. No. 759, 639, of May 10, 1904; and also offers in evidence "Complainant's Exhibit for Identification Hawthorne Diagrams Nos. 3 and 4 of September 30, 1913"; also Stewart Sketches No. 1 and 2 of September 27, 1913; and the same are marked respectively "Complainant's Exhibit Sheble

(Deposition of William H. Locke, Jr.)

Patent," "Hawthorne Diagrams" and "Stewart Sketches."

WILLIAM H. LOCKE, Jr.

Subscribed and sworn to this 1st day of November, 1913.

JESSIE B. KAY,

Notary Public, New York Co.

Adjourned till Monday, Nov. 3, 1913, 10 A. M.

[133]

Office of Duncan & Duncan.

November 3, 1913.

Met pursuant to adjournment.

Present: Same as before.

[**Deposition of Arthur P. Pettit, for Complainant.**]

ARTHUR P. PETTIT, being called as a witness for complainant and having first been duly sworn, deposes as follows in answer to questions by Mr. Duncan:

Q. 1. State your name, age, residence and occupation.

A. Arthur P. Pettit; age, 39 years; 439 Manhattan Avenue, New York City; I am connected with the Van Dyck Gravure Company, New York City.

Q. 2. Prior to your present business connection were you at any time connected with the manufacture or sale of phonograph and similar supplies and if so, with whom and during what period?

A. In 1897 or 1898 I was connected with my brother in the business of selling talking machines and supplies in Newark, N. J., under the name of the Edisonia Company. I remained with this con-

(Deposition of Arthur P. Pettit.)

cern until some time in 1900 or thereabouts. About the end of that year or in 1901 I went with Douglas & Company, later known as the Douglas Phonograph Company. I remained with this concern until 1906 or thereabouts.

Q. 3. In what capacity did you act while connected with your brother in the Edisonia Company?

A. I was salesman and purchaser and performed general duties of various sorts in connection with that concern. We did a very large business in talking machines and supplies and I traveled quite extensively in the east both in connection with the purchase and the sale of our goods.

Q. 4. How familiar did you become while you were with the Edisonia Company with phonograph supplies then on the [134] market?

A. It was part of my duties both as buyer and seller for our company to keep closely in touch with the standard phonograph supplies then on the market and also with all improvements and novelties which were offered from time to time. Our company did a large and active business and we were classed as one of the most important handlers of talking-machine supplies in the country and we tried to live up to our reputation.

Q. 5. Did you become familiar during the period referred to with the horn used by the trade and the public in connection with talking machines?

A. I did. We handled large quantities of horns and I visited the various manufacturers of such horn from time to time, purchased large quantities, and

(Deposition of Arthur P. Pettit.)

was thoroughly familiar with the various horns then on the market.

Q. What concerns were then engaged in the manufacture of talking-machine horns?

A. The important manufacturers of horns at that time were the Hawthorne & Sheble Mfg. Co. of Philadelphia, and the Tea Tray Co. of Newark, N. J. The Standard Metal Manufacturing Company commenced manufacturing horns in large quantities some time in 1900 or thereabouts. These three concerns were the largest manufacturers of horns.

Q. 7. Up to the time you went with Douglas & Company, what horns were supplied by the talking-machine companies as a standard part of the equipment of their talking machine?

A. The talking-machine companies supplied only short, cheap tin horns. At the very outset they supplied simply an ordinary cone varying from 14 to 18 inches in length. Then some of them supplied a short horn about 14 to 18 inches or so in length consisting of a narrow cone connected with the larger end of which was a conical bell. I have one of these horns here. Toward the end of the period [135] you refer to or shortly before the introduction of the flower horn the companies were supplying a conical horn with a flaring bell, the total length of the horn being some 14 to 18 or 20 inches. These horns were very cheap and the users of the talking machines nearly always discarded these horns and bought larger ones from the dealers.

Q. 8. About when was the flower horn mentioned



(Deposition of Arthur P. Pettit.)

by you in your last answer introduced?

A. Some time early in 1904 the Nelsen horn appeared on the market in considerable quantities. Toward the end of that year and by the beginning of 1905 practically everybody was making and selling the flower horn.

Q. 9. Prior to the introduction of the flower horn and during the first part of your employment with Douglas & Co., what was the habit of the phonograph companies in regard to supplying horns as part of the regular equipment of their machine?

A. It remained the same as I have already described in connection with the earlier period before I went with Douglas & Company.

Q. 10. You have spoken of the larger horns which you say were bought by the public for use on talking machines prior to the introduction of the flower horn. Please describe the larger horns that were supplied by independent manufacturers and dealers up to the introduction of the flower horn.

A. The larger horns referred to were either all brass or were of the B. & G. type. The all-brass horn had practically the same shape as the B. & G., but both the cone and the bell were made of brass while in the B. & G. horn the cone was made of steel or tin and the bell of brass. These horns were made of varying sizes up to 56 inches and in special cases even larger. The body portion was in the shape of a cone formed of a single piece [136] of metal bent into shape and with the seam braized or soldered or locked. The bell was flaring with a curved con-

(Deposition of Arthur P. Pettit.)

tour and was usually spun or drawn. It was braized or soldered or locked to the large end of the cone. The sides of the cone were straight.

There were some aluminum horns or silveroid horns offered on the market which were made in the same way and on the same lines as the B. and G. horn, except that the metal used was aluminum or an imitation called silveroid. There were also some horns offered having a tin or steel body and an aluminum bell. These were of the same construction and shape as the B. & G. None of these aluminum or silveroid horns, however, had any large sale. The B. & G. horn was the popular horn and was sold in very large quantities.

At one time a glass horn was offered on the market, but because of expense and liability to breakage and other reasons this horn did not succeed.

Q. 11. What horns were purchased by the public generally or supplied by the talking-machine companies as part of their standard equipment after the introduction of the so-called flower horn?

A. As I have already said shortly after the Nielsen horn went on the market a number of other companies including the Hawthorne & Sheble Mfg. Co., the Tea Tray Company and the Standard Metal Mfg. Co. which had previously been making the B. & G. and the all-brass horns took up the flower horn and a number of smaller companies also went into the manufacture of the flower horn. This style of horn was at once recognized by the trade and the public as superior to the former styles of horns which were

(Deposition of Arthur P. Pettit.)

practically superseded by the flower horn, practically all new sales were of the flower horn and many people discarded their old horns and bought the flower type. It was not long before some of the talking-machine companies themselves recognized [137] the superiority of that horn by adopting it as part of the standard equipment of their machines, raising the price of the machines to include the horn.

Q. 12. What was the construction and shape of the so-called flower horn that you say was introduced by Nielsen and shortly afterward adopted by various other concerns?

A. It was called the flower horn because of its resemblance to a morning-glory or a lily. It was sometimes known as the morning-glory or lily horn, but was generally known simply as the flower horn. It was made up of a number of strips or sections running from the small end to the large end of the horn. The edges of the adjoining sections were fastened together on the outside of the horn. The outside of the horn tapered gradually outward from the small end until near the large end when it curved more rapidly out to the end of the bell, thus giving a curved flaring contour.

Q. 13. When did the term "flower horn" come into the trade?

A. It was in connection with the Nielsen horn. I first heard of it in the early part of 1904. It became general during that year.

Q. 14. Prior to the Nielsen horn was the term "flower horn" used in the trade?

(Deposition of Arthur P. Pettit.)

A. I never heard of any such term used nor do I know of any horn to which that term could have properly been applied prior to the Nielsen horn.

Q. 15. When did you first know of the Nielsen horn?

A. I think it was in connection with the sale of that horn by the Bettini Phonograph Company. I may have heard of it before, but as soon as the Bettini Phonograph Company commenced to handle the horn, I saw the horn and from time to time bought some of the horns from the Bettini Phonograph Co. because the dealers wanted them. I came [138] in contact with Nielsen himself and afterwards with Mr. Krabbe and I wanted to get exclusive rights on the horn because I saw that it was a valuable improvement and saw that the trade would want it, but I found that Nielsen had made an arrangement with the Bettini Phonograph Co. that prevented my getting exclusive rights. Later on I made an arrangement with Mr. Krabbe to handle the Nielsen horns.

Q. 16. At the time you made your arrangement with Mr. Krabbe to handle the Nielsen horn what was your position with Douglas & Company?

A. At that time I was manager of that concern.

Q. 17. Previously to your becoming manager what would be your duties in connection with Douglas & Co.?

A. I traveled from Maine to California, acting both as their purchaser and as salesman for supplies.

Q. 18. To what extent did you become familiar with the horns then on the market and the attitude

(Deposition of Arthur P. Pettit.)

of the trade and the public toward such horns?

A. I knew the horn trade thoroughly as it was part of my business to keep in direct touch with it and I naturally became thoroughly familiar with the attitude of jobbers and dealers and users generally toward the horn in regular use and toward new horns proposed for use.

Q. 19. As a result of your own experience and as a result of your knowledge of the view of the trade and of the public, please state whether the so-called flower horn that you say was introduced by Nielsen in 1904 or thereabouts proved more satisfactory than or superior to the horns previously on the market, and if so in what respect?

A. The flower horn proved decidedly superior as was shown by the fact that it very quickly replaced the old horn and drove them out of the market. The flower horn gave much better tone reproduction than the B. & G. horn or the all-brass horn. With both of these horns that had been [139] previously used metallic vibration frequently interfered with the clearness and purity of the reproduction, particularly with certain kinds of voices and instruments. These counter-vibrations of the all-brass horn and of the B. & G. horn were recognized as undesirable and as difficulties that we tried to get over, but these were not done away with until the flower horn came in. The shape of the flower horn gave a rounder and fuller tone than the previous horns. The sectional construction of the flower horn broke up and did away with the objectionable coun-



(Deposition of Arthur P. Pettit.)

ter-vibration and allowed the records to be produced with clearness and without interference. This was such an advance over the prior horns that the flower horn was at once recognized as much better and as soon as they came on the market no one wanted any other kind of a horn.

Q. 20. To what extent, if you know, did the Hawthorne & Sheble Mfg. Co. make the flower horn?

A. Toward the end of 1904, or early part of 1905, they commenced making the flower horn in large quantities and thereafter made it as their regular horn, replacing the B. & G. and the brass horn. Later the Hawthorne & Sheble Mfg. Co. made the flower horn for the Columbia Phonograph Company.

Q. 21. Were you familiar with the horn product of the Hawthorne & Sheble Mfg. Co. prior to 1904?

A. I was. I came in constant contact with their product in horns and frequently called upon that company and visited its offices and factory. I have bought Hawthorne & Sheble horns while with the Edisionia Company and while with Douglas & Company and I have seen their products in the stores of jobbers and dealers and was thoroughly familiar with it.

Q. 22. Did you while connected with Douglas & Company know of any horns being offered by the Hawthorne & [140] Sheble Mfg. Co. for the Christmas trade of 1903 that had the flower shape and that were made up of steel sections soldered together?

A. I do not know of any such horn being offered

(Deposition of Arthur P. Pettit.)

at that time by the Hawthorne & Sheble Mfg. Co. and I am sure that if any such horn had been offered on the market for the Christmas trade of 1903 I would have known it. The first horn of the flower type that was offered by the Hawthorne & Sheble Mfg. Co. to my knowledge was some time about the summer of 1904 after I had seen the Nielsen horn at Bettini's.

Q. 23. While you were with Edsonia Co. were you familiar with the Hawthorne & Sheble horn products?

A. I was, as I have already stated thoroughly familiar with that product.

Q. 24. Did that company to your knowledge put upon the market prior to 1900 any aluminum horn made up of sections running from the small end to the big end of the horn, the edges of the sections being fastened together by a seam?

A. No such horn was put upon the market by the Hawthorne & Sheble Co. during the period referred to so far as my knowledge goes. I was so closely in touch with the trade at that time and with the Hawthorne & Sheble products that I am sure I would have known of such a horn had it been made and offered by that concern.

Q. 25. While you were with the Edsonia Company were you familiar with the Columbia Graphophone Grand?

A. Yes, we handled that machine.

Q. 26. What horn was used with that machine.

A. A large brass horn.

(Deposition of Arthur P. Pettit.)

Q. 27. Did you ever hear of any aluminum horn made up of strips or sections fastened together at their edges being used in connection with the Columbia Graphophone Grand?      A. I did not.

Q. 28. Did you ever hear of any brass horn being put [141] upon the market by the Hawthorne & Sheble Mfg. Co. prior to 1900 made up of four or more longitudinal sections extending from the small end to the big end of the horn and the edges of the sections being fastened together by soldering, braizing or otherwise?

A. No, I have never seen such a horn; most of their horns had only a single seam, possibly some of their horns had two seams in the body opposite each other. The so-called spun brass horns were made usually by folding up a single sheet of metal to form a conical body and soldering or braizing the edges together in a single seam. The bell was drawn or stamped out of a sheet of metal and was placed on a form and spun so as to give the desired shape. The bell was then soldered or braized to the conical body and the whole was polished.

ARTHUR P. PETTIT.

Sworn before me this 3d day of November, 1913.

JESSIE B. KAY,

Notary Public, New York Co. [142]

**[Proceedings Had August 4, 1914, 11 A. M.]**

*United States District Court, Northern District of  
California, Second Division.*

SEARCHLIGHT HORN COMPANY,

Complainant,

against

PACIFIC PHONOGRAPH COMPANY,

Defendant.

SEARCHLIGHT HORN COMPANY,

Complainant,

against

BABSON BROTHERS, INCORPORATED,

Defendant.

**CONTINUATION OF COMPLAINANT'S  
PROOFS.**

Office of Frederick S. Duncan, Esq.,  
73 Nassau Street, New York City, N. Y.

Tuesday, August 4, 1914, at 11:00 A. M.

Present: JEANETTE C. O'CONNOR, Notary Public.

FREDERICK S. DUNCAN, Esq., Counsel for Complainant, 73 Nassau Street, N. Y.

J. EDGAR BULL, Esq., Counsel for Defendant, 141 Broadway, N. Y.

Met pursuant to notice for the purpose of cross-examination of complainant's witnesses; Messrs. Locke, Krabbe, Petit and Merritt.

(Deposition of William H. Locke, Jr.)

Complainant's counsel now states that pursuant to notice heretofore given to defendant's counsel, and [143] pursuant to order of the Court heretofore made, complainant's counsel now produces, for cross-examination, commencing to-day and continuing on succeeding days, complainant's witnesses: William H. Locke, Jr., Christian Krabbe, Arthur P. Petit and Edwin A. Merritt, whose direct testimony was given by deposition taken in November, 1913.

**[Deposition of William H. Locke, Jr., for  
Complainant (Cross-examination).]**

Thereupon WILLIAM H. LOCKE, Jr., having been produced for cross-examination, testifies as follows, in answer to interrogatories by Mr. Bull:

XQ. 37. Referring to the assignment from the United States Horn Company to the Searchlight Horn Company, I notice that the consideration named is \$3,166, in the form of notes. Were those notes paid?      A. No, sir.

XQ. 38. None of them paid?      A. No, sir.

XQ. 39. I notice that the consideration which is named in the assignment from Nielsen to Krabbe is \$1,764.25. Did that include the purchase of any tools or materials from Nielsen.

A. I do not know.

XQ. 40. Is the United States Horn Company still in existence?      A. Yes, sir.

XQ. 41. Has it done any business since it sold the Nielsen Patent to the Searchlight Horn Company?

A. No, sir.

XQ. 42. When did your connection with the



(Deposition of William H. Locke, Jr.)

Searchlight [144] Company begin?

A. When it was incorporated, early in 1906.

XQ. 43. What was your connection with the company at that time? A. I was an officer.

XQ. 44. You were, at the same time, connected with the United States Horn Company?

A. Yes, sir; the president.

XQ. 45. What was the nature of the business of the Searchlight Company down to the time that it secured the assignment of the patent in suit from the United States Horn Company?

A. It had a factory, and considerable machinery, and manufactured horns.

XQ. 46. Of what type of construction?

A. Our principal business was a fluted horn of a little different shape from the regular style of horn, made in four sections and called the "Searchlight" horn.

XQ. 47. How were those sections joined together?

A. They were soldered together.

XQ. 48. With an overlap joint or with a tinsmith joint?

A. With an overlap joint; in fact, the joint was part of the rib.

XQ. 49. Can you make a sketch of that joining?

A. I am not a mechanic, Mr. Bull. But it would be very easy to procure it if you want it. The Thomas A. Edison Company have some. You can also find them in stores [145] all over New York.

XQ. 50. At the present time?

A. Yes, at the present time.

(Deposition of William H. Locke, Jr.)

XQ. 51. Will you be good enough to produce one, for my inspection?

A. Yes, sir. I say "Yes," but I do not know whether I can have one to-day or not. There is no question but that there are some in the Thomas Edison laboratory. They have had them, and no doubt they still have them.

XQ. 52. How many of these horns did the Searchlight Company make?

A. My impression is, from 35,000 to 50,000.

XQ. 53. Did they continue to make them after they secured the title to the Nielsen Patent?

A. Oh, yes.

XQ. 54. Down to the time they ceased doing business? A. Practically so, yes.

XQ. 55. Did the Searchlight Company have any license from the owners of the Nielsen Patent, prior to the time that the assignment from the United States Horn Company to the Searchlight Company was made?

A. No, they did not; though the ownership in the two companies was practically the same.

XQ. 55. What was the name by which the so-called Nielsen horns were sold by the Searchlight Company? What was the trade name?

A. I do not know that we made any Nielsen horns. We tried to put out a horn that we thought would be a novel [146] one, but it did not take, in competition with the flower horn. There was no market for any brass horns at that time in competition with the

(Deposition of William H. Locke, Jr.)

big companies that made the horn a part of their equipment.

XQ. 57. When did the large companies begin to make the horn a part of their equipment?

A. My impression is, the Victor Company in 1906; the Edison Company in 1907; and the Columbia people, in 1906. Of course, the Edison Company was the best customer; that is, the Edison Company business was the most important in the trade.

XQ. 58. By the "Edison Company" you mean the "National Phonograph Company"? A. Yes.

XQ. 59. Prior to 1907, the National Phonograph Company, as I understand it, sold the phonograph without any horn attachment?

A. Without a flower horn. They had a small "B & G" horn that was furnished with each machine, but that was immediately discarded for a larger horn.

XQ. 60. That is to say, up to the time the common practice of the purchaser was to discard the small horn that was furnished with the machine, in order to purchase a larger horn from a dealer? A. Yes.

XQ. 61. As I understand it, what was known on the market as the "Searchlight" horn was the horn which the Searchlight Company began to manufacture prior to the time when the [147] assignment of the Nielsen Patent was made to it by the United States Horn Company, and continued to manufacture down to the time it ceased doing business?

A. Yes.

XQ. 62. Do you understand what is commonly

(Deposition of William H. Locke, Jr.)

known as the tinsmith joint?

A. Do you mean the lock seam?

XQ. 63. Yes.      A. Yes, sir.

XQ. 64. You said that these "Searchlight" horns were composed of four sections joined together. Were they joined together with a lock seam?

A. No, sir.

XQ. 65. Were those four sections tapered?

A. The shape of the horn itself was parabolic.

XQ. 66. It was something of the flower shape, was it not?      A. Something like it, yes.

XQ. 67. I now show you what purports to be a letter from the Searchlight Horn Company to W. E. Gilmore, President of the National Phonograph Company and signed by you as president of the Searchlight Horn Company; the letter being dated December 26, 1906. Do you recognize this letter?

A. (Examining the letter in question.) Yes, sir.

XQ. 68. Does that letterhead correctly illustrate the form of the "Searchlight" horn manufactured by your company? [148]

A. That is a photograph of it. It does not show all of the inside; only part of the inside of it; and also the outside of it.

(Defendant's counsel offers in evidence the letter in question, marked "Defendant's Exhibit, Letter from Searchlight Horn Company to W. E. Gilmore, dated December 26, 1906. August 4, 1914.")

XQ. 69. Of what material were those "Searchlight" horns made?      A. Tin.

XQ. 70. You stated, in your answer to Q. 27, that

(Deposition of William H. Locke, Jr.)

you called on the National Phonograph Company.

What was the purpose of your call?

A. To do business with them.

XQ. 71. That is, to sell them some of your horns?

A. Yes, sir; I also tried to sell them the patent. When we got out the folding horn they offered me to handle it exclusively for them, if I could get them out in time.

XQ. 72. You do not allege that your attorney ever gave the National Phonograph Company written or formal notice of the fact that they were infringing on the Nielsen Patent?

A. I could not say. I talked the matter over with Mr. Gilmore several times. I tried to interest him in purchasing the patent and told him that if the National Phonograph Company owned the flower patent, it would be in a very strong position, as far as the horn question was concerned, in the trade. [149]

XQ. 73. Isn't it a fact that your correspondence and conversations with officers of the National Phonograph Company was directed to inducing them to purchase your horn or purchase your patent?

A. Both.

XQ. 74. You wrote several letters to officers of the National Phonograph Company, did you not?

A. Yes, sir.

XQ. 75. Did you, in any letter, ever warn them of an infringement by them of the Nielsen Patent?

A. I cannot say as to that.

XQ. 76. In this letter to Mr. Gilmore, dated December 26, 1906, you refer to your "Searchlight



(Deposition of William H. Locke, Jr.)

Junior'' horn. What kind of a horn is that?

A. That was a smaller horn, of the same shaps.

XQ. 77. And the same construction, as shown on the letterhead?

A. Yes, sir, the same construction.

XQ. 78. Do you remember the "sample of the horn for "the 'GEM' Machine" referred to in the letter?

A. (Examining the letter in question.) No, I do not. I cannot remember that.

XQ. 79. Have you copies of any of the letters warning parties of the infringement of the Nielsen Patent, sent to them either by your attorney or by your company?

A. I think some of the letters of my attorney are exhibits in some of these actions.

XQ. 80. If one of these letters are in evidence, would you be able to produce a copy of them, or any of them? [150]

A. I think I can find them. They may be in California, or here. Mr. Miller may have them in his possession.

XQ. 81. Is the list which you gave in answer to Q. 27 given from memoy? A. No, sir.

XQ. 82. Where did you get that list from?

A. This list was copied from a number of letters handed to me by Mr. Stickney; and I believe the originals are in the possession of Mr. Miller.

(Adjourned here for luncheon, to resume at 2:30 P. M. the same day.) [151]

Office of Frederick S. Duncan, Esq.,  
73 Nassau Street, N. Y.

Tuesday, August 4, 1914.

Met (at 2:30 P. M.) pursuant to adjournment.

Present: Same as before.

**[Deposition of Arthur P. Pettit, for Complainant  
(Cross-examination).]**

ARTHUR P. PETTIT is now produced by complainant's counsel for cross-examination, in accordance with the order heretofore made herein, and in accordance with the notice by Mr. Bull.

Mr. BULL.—Cross-examination waived.

An adjournment was taken until 11 o'clock A. M. on Wednesday, August 5, 1914, when the cross-examination of Mr. William H. Locke, Jr., will be resumed by Mr. Bull. [152]

Office of Frederick S. Duncan, Esq.,  
73 Nassau Street, New York City.

Wednesday, August 5, 1914.

Present: Same as before.

**[Deposition of Edwin A. Merritt, for Complainant  
(Cross-examination).]**

EDWIN A. MERRITT, having been produced by complainant for cross-examination, pursuant to order of the court, and to notice to defendant's counsel, testifies as follows in answer to interrogatories by Mr. Bull.

Cross-examination by Mr. BULL.

XQ. 61. You stated in answer to Q. 13, that about November, 1903, you first met Mr. Nielsen, and that at that time he came into the store of the company

(Deposition of Edwin A. Merritt.)

by which you were employed, in an effort to sell his horn. How do you fix that date?

A. I fix that date as right after the first of the year. I went to work for Bettini Phonograph Company, who were right across the way, in the early part of 1904.

XQ. 62. What time in 1904?

A. I think it was about March.

XQ. 63. Have you any written memorandum by which you can fix how long before you went to work for Bettini, that you first saw Nielsen?

A. Except with regard to his patent papers that were gotten up, it was in the early part of 1904 that I had seen him, and I was with Mr. Nielsen when he went there [153] to have those papers drawn up.

XQ. 64. That is the only written memorandum?

A. That is the only written memorandum that I have; yes, sir.

Redirect Examination by Mr. DUNCAN.

RDQ. 65. With whom were you connected when you went with Mr. Nielsen to have his patent papers drawn up?

A. With the Bettini Phonograph Company.

RDQ. 66. By his "patent papers" what do you refer to?

A. The papers that were drawn up by Mr. Tate.

RDQ. 67. Do you refer to the application that resulted in the Nielsen patent here in suit?

A. Yes, sir.

(The signature of the witness is waived by consent of counsel.) [154]

[Deposition of William H. Locke, Jr., for  
Complainants (Cross-examination).]

The cross-examination of WILLIAM H. LOCKE, Jr., is now resumed.

Cross-examination by Mr. BULL.

XQ. 83. Acting upon your suggestion, Mr. Locke, I obtained from the Standard Metal Manufacturing Company two horns, which I now show you. Will you please state what these are, and how they came to be in possession of the Standard Metal Manufacturing Company?

A. Those are part of the stock moved to the factory of the Standard Metal Manufacturing Company with our machinery.

XQ. 84. That is, when you made your contract?

A. Yes, about May 1, 1908.

XQ. 85. Is this purple horn a sample of your "Searchlight" horn about which we were talking yesterday? A. Yes; parabolic in shape.

XQ. 86. And which is known to the trade as the "Searchlight" horn? A. Yes.

The horn referred to is offered in evidence, and marked "Defendant's Exhibit, Searchlight Horn."

XQ. 87. Referring to the red horn, which is the folding horn—is this the folding horn referred to in your testimony of yesterday?

A. Yes, sir. It is called, the "Searchlight Folding Horn."

XQ. 88. How many other types or styles of horns did [155] the Searchlight Company manufacture, if any?

(Deposition of William H. Locke.)

A. We made the regular flower horn, but we pushed this Searchlight horn because it was different from anything else on the market.

The red horn, last referred to, is offered in evidence, and marked "Defendant's Exhibit, Searchlight Folding Horn."

XQ. 89. You state in your answer to XQ. 56 yesterday, that you do not know the Searchlight Company made any Nielsen horns. Do I understand you to contradict that statement in your last answer?

A. We made a few, but not of any quantity.

XQ. 90. About how many?

A. More samples than anything else. We made this folding horn to put out in place of the flower horn.

XQ. 91. When did you first put out this folding horn?

A. My impression is that it was late in 1907.

XQ. 92. How many of these folding horns did the Searchlight Company sell?

A. I think about 3,000. The Talking Machine Company themselves made horns part of their equipment.

XQ. 93. How many flower horns did the United States Horn Company make and sell?

A. They made, it seems to me, 3,000 or 4,000. I know they did not sell all of them.

XQ. 94. That was all before the date of the assignment from that company to the Searchlight Company? A. Yes. [156]

XQ. 95. Do you mean to be understood as saying



(Deposition of William H. Locke.)

that the "Searchlight" horns (and by this term I exclude the folding horn) were all marked with the date of the Nielsen patent?

A. I think it was on the small end of the horn.

XQ. 96. Do you find the patent mark stamped on the horn which has just been introduced in evidence?

A. (Examining the horn.) There is nothing stamped on this except "patent applied for." But we applied for a patent on this particular horn; and we got a design of it.

XQ. 97. Having refreshed your recollection by examining the horn, are you prepared now to say that the date of the patent in suit was stamped on the "Searchlight" horns?

A. No. Referring to the small end of the horn I find that there is no date of the Nielsen Patent.

XQ. 98. Will you positively swear that you ever notified the National Phonograph Company that it was infringing the Nielsen Patent in suit?

A. I notified Mr. Gilmore by word of mouth, and also Mr. Pelser, their attorney. It was generally known in the trade that we owned the Nielsen Patent. It was as well known as the flower horn; and we sent a circular to the whole trade, some time in 1906—that is, the jobbing trade—notifying them that any flower horns sold were an infringement on our patent.

XQ. 99. Can you produce a copy of that?

A. I cannot to-day. It is my impression that Mr. Miller has those copies. [157]

XQ. 100. Did not that notice relate to the Billy Patent particularly?

(Deposition of William H. Locke.)

A. No, sir. We thought of purchasing it as we thought there was a market for folding horns, but we found the construction of the Billy Patent for a metal horn was not attractive to the trade. We made up one or two samples.

XQ. 101. Did not your company claim that the reissue of the Billy Patent made it broad enough to cover all flower horns? And did you not so inform the National Phonograph Company?

Mr. DUNCAN.—Objected to as incompetent.

The forepart of the question is the best evidence as to what was claimed; and the balance of the question calls for hearsay and incompetent testimony.

A. I never went into the matter of the claims of the various patents with anybody. Counsel thought that we had a good patent.

XQ. 102. Did you not go into that matter at the time you were trying to sell these patents to the National Phonograph Company?

A. No, sir.

XQ. 103. Did you not try to sell all your patents to the National Phonograph Company?

A. I think I did. I know I tried to sell them the folding horn patent.

XQ. 104. I have requested the Edison people to search their files, and to send to me all letters received from [158] you or from the Searchlight Horn Company; and in compliance with that request I have received the five letters which I now show you. Do you recognize these as being letters written by you?

(Deposition of William H. Locke.)

A. (Examining the five letters.) Yes, sir.

The five letters just referred to are offered in evidence, and marked "Defendant's Exhibits, Correspondence Between Searchlight Horn Company and the National Phonograph Company."

For convenience a copy of each of these letters, as well as the letter introduced in evidence yesterday, in connection with XQ. 68, is included in this record, as follows:

**[Defendants' Exhibits Correspondence Between  
Searchlight Horn Company and the National  
Phonograph Company.]**

"Searchlight Horn Company.

753-755 Lexington Avenue.

Brooklyn, N. Y., December 26, 1906.

W. E. Gilmore,

National Phonograph Company,

Orange, N. J.

Dear Sir: We send you, by messenger, sample of our Searchlight 'Junior' horn; also sample of the horn for the 'Gem' machine.

Very truly yours,

SEARCHLIGHT HORN COMPANY.

WHL:DA. [159]

W. H. LOCKE, Jr., Pres."

"SEARCHLIGHT HORN COMPANY,

753-755 Lexington Avenue.

Brooklyn, N. Y., December 12, 1906.

W. E. Gilmore, Esq.,

President National Phonograph Company,

Orange, New Jersey.

Dear Sir: We submit for your consideration the

following: The last 'Knock Down' sample horn we sent you we consider the most perfect product of its kind ever turned out, both structurally and acoustically.

If you agree with us, and feel it to your interest to make our horn part of your equipment, we can make it in a different size, if necessary, though we believe the size from the consumer's standpoint is the best, and you can pack the horn in your regular phonograph box in a smaller space than it occupies in our box.

Of course you realize it takes a little time to get the machinery in good condition for the quantity you spoke about, and in this connection we would suggest you seriously consider how long a contract you want to make with us.

Very truly yours,

SEARCHLIGHT HORN COMPANY,

W. H. LOCKE, Jr., Pres.

WHL:DA. [160]

"SEARCHLIGHT HORN COMPANY,

753-755 Lexington Avenue.

Brooklyn, N. Y., December 21, 1906.

W. E. Gilmore, Esq.,

President National Phonograph Company,

Orange, N. J.

Dear Sir: The Edison Gem Phonograph arrived, for which accept our thanks.

Our Mr. Berner says he will have no trouble in making a satisfactory horn for this machine.

In reference to the metal used in the 'Knock Down'

horn being too thin at the small ends of the sections we can use a heavier metal if desirable, though our present horn weighs one-half a pound more than the other horns in the market.

Extending to you the compliments of the season,  
I am,

Very truly yours,  
W. H. LOCKE, Jr., Pres."

WHL:DA.

"SEARCHLIGHT HORN COMPANY,  
753-755 Lexington Avenue,  
Brooklyn, N. Y., December 22, 1906.

Mr. W. E. Gilmore,  
President National Phonograph Co.,  
Orange, N. J.

Dear Sir: Your esteemed favor of the 21st inst. received, and in reply to same would say that we will send you, [161] by express, on Monday, a 16" horn which we can construct on the 'Knock Down' principle so it can be packed with your 'Gem' machine. We will also send you, at the same time, our new 19" Searchlight 'Junior' horn, for your inspection.

The writer will be glad to call on you at your factory on next Thursday. If you care to set any time, kindly let me know, otherwise I will call about 10:00 A. M.

Very truly yours,  
SEARCHLIGHT HORN COMPANY.  
W. H. LOCKE, Jr., Pres.

WHL: DA.



“SEARCHLIGHT HORN COMPANY,  
753-755 Lexington Avenue.

Brooklyn, N. Y., April 21, 1907.

Mr. W. E. Gilmore, Pres.

Dear Sir: We will have a new collapsible horn to submit to you next week, constructed to fold up, substantially in two pieces—which can be packed in a space 6x6x20 inches; but this can be modified to suit your packing-cases. The shape will be satisfactory. The horn will have a 24-inch bell, and we believe it will meet your requirements as it can be produced at a very low cost.

Yours very truly,  
W. H. LOCKE, Jr., Pres.” [162]

“New York, July 20, 1909.

Mr. Frank L. Dyer, Pres.

National Phonograph Company  
Orange, N. J.

Dear Sir: Enclosed you will find United States letters patent just issued on our Folding Horn. French and English patents have been granted, German to follow. The United States and Foreign rights are for sale. Price reasonable—terms will be made satisfactory.

This horn is the only practical all-metal collapsible horn in the world, and consists of a hinged bell, inner tube, outer tube and nut. It can be made from any weight of metal now used. Its amplifying and tone qualities are equal to a lap-seamed horn, and in quantities can be manufactured at a moderate advance in cost. Made to pack with the talking machine in the

(Deposition of William H. Locke.)

original package, reaching the consumer without re-handling, and in perfect condition, thereby eliminating the necessity for more than one package, a great saving in room, freight and expressage. Can be finished in any color or decoration.

We are also owners of patents 739,954 issued September 29, 1903, 771,441 issued October 4, 1904, and 12,442 reissued October 26, 1905. These are the earliest Flower Horn patents.

Very truly yours,

SEARCHLIGHT HORN COMPANY.

W. H. LOCKE, Jr., Pres."

1271 Broadway, N. Y." [163]

XQ. 105. Did you ever issue any advertising matter respecting the Searchlight parabolic horn?

A. Yes, sir.

XQ. 106. Can you produce copies of such advertisements?

A. I can give you price list, covering our advertisement for the year; full-paid advertisement, double-page advertisement.

XQ. 107. During what year?

A. 1906 and 1907, I think.

XQ. 108. How did this Searchlight parabolic horn compare with the flower horn previously manufactured by the United States Horn Company as to its reproducing qualities?

Mr. DUNCAN.—Objected to as not proper cross-examination, and as incompetent.

A. We always claimed that it was a better horn,

(Deposition of William H. Locke.)

but the trade did not respond; they preferred the flower horn.

XQ. 109. Like all horn manufacturers, you claimed that your horn was the best?

A. Naturally, yes.

XQ. 110. How did the Searchlight folding horn compare with the flower horn previously manufactured by the United States Horn Company in reproducing sound?

Mr. DUNCAN.—Same objection.

A. I never could see any material difference in the reproduction with the folding horn or with the regular flower horn.

XQ. 111. You have spoken about a suit against Senne, doing business under the name of the Nova Phonograph Horn Company. Where was that suit brought? [164] A. In New York City.

XQ. 112. Are you sure of that?

A. Yes, sir.

XQ. 113. And in that suit you obtained judgment by default, I believe you said at the end of your answer to Q. 29?

A. (Examining his previous testimony.) I know we got a judgment against them. I am not a lawyer; I could not really say. I know that the horn was not manufactured any longer; it was discontinued.

XQ. 114. How were the ribs on that horn made; that is, the horn which was made by the Nova Company?

A. They made them both ways—with the so-called butt seam and the tinsmith or lock seam.

(Deposition of William H. Locke, Jr.)

XQ. 115. Are you positive that they used the lock seam?     A. Yes, sir, both.

XQ. 116. At the time the Searchlight Company made the deal with the Standard Metal Manufacturing Company, and turned over to that company all the machinery and stock, you were aware of the fact, were you not, that said company was manufacturing flower horns for the National Phonograph Company, and had been for some time past?

A. If your statement is a fact, I have no doubt that I knew the horns were manufactured by them.

XQ. 117. Do you know, as a matter of fact, that the National Phonograph Company purchased any flower horns from the Standard Metal Manufacturing Company at that time?     A. Yes, I do.

XQ. 118. Referring to your answer to Q. 29, "between [165] "35,000 and 40,000 horns," did that include the Searchlight parabolic horn?

A. Yes. I think I stated yesterday, from 35,000 to 50,000. I think my statement previously, "from 35,000 to 40,000 was nearer to it.

Redirect Examination by Mr. DUNCAN.

RDQ. 119. In answer to XQ. 55 you stated, with relation to the Searchlight Company and the United States Horn Company, that the "ownership in the two companies was practically the same." What did you mean by that?

A. I meant that the same ownership controlled both companies.

RDQ. 120. Am I right in understanding that the United States Horn Company first put upon the mar-

(Deposition of William H. Locke, Jr.)

ket and tried to sell the so-called flower horn, made in accordance with the horns originally made by Nielsen? A. Yes.

RDQ. 121. What effect, if any, did the competition of other manufacturers of this so-called flower horn have upon the flower horn business of the United States Horn Company?

A. The manufacturers of the so-called "B. & G." horn, having large factories and plenty of machinery, and an old trade connection, took up the manufacture of the flower horn a few months after Nielsen put his horn on the market and made it very hard for us to get a foothold.

RDQ. 122. You have spoken, in your cross-examination of your company trying to put out a somewhat different horn as a novelty, in competition with the manufacturers [166] of flower horns. What horns were you referring to as having been put out by your company as a novelty?

A. The horn called the "parabolic" horn.

RDQ. 123. What was your idea in putting out that horn?

A. To construct a horn so as to get a reasonable price.

RDQ. 124. What was the character of the horns that were being put out by competing manufacturers at the time the Searchlight Horn Company commenced business?

A. The majority of them were flower horns, and the old B. & G. horns.

RDQ. 125. Do I understand you correctly that it



(Deposition of William H. Locke, Jr.)

was the idea of your company that by introducing a novelty, namely, the "Searchlight" horn, you could get business for your company in spite of the competition of the big manufacturers?     A. Yes, sir.

RDQ. 126. Did that attempt succeed?

A. No, sir; it did not.

RDQ. 127. Did the parabolic Searchlight horn prove acceptable to the trade?

A. Well, we sold 30,000 to 40,000 of them.

RDQ. 128. What was your idea in going into the manufacture and sale of the folding horn?

A. Our principal idea was to make a horn of the same general construction as the regular flower horn, that could be collapsible and packed in a very small space, and shipped with the talking machine in the original package.

RDQ. 129. Was your company successful in its attempt [167] to introduce and sell the folding horn on a commercial scale?

A. No, sir; at that time the trade had already been notified that one of the companies would make horns part of their equipment.

RDQ. 130. Referring to your negotiations with the National Phonograph Company for the sale to that concern of the patents of the Searchlight Horn Company, I note that your company's letter of July 20, 1909, offered in evidence by the defendant in connection with your cross-examination, refers to these negotiations. How much longer after the date of this letter did those negotiations continue?

A. I should say, at least a month or two. I think

(Deposition of William H. Locke, Jr.)

I stated September. On examination I must have referred to some memorandum I had giving that date or that time. In my examination yesterday, in answer to XQ. 44 I said that I was president of the United States Horn Company. I was a director but not the president; that is a mistake. I was the president of the Searchlight Horn Company.

RDQ. 131. The correspondence with Mr. Gilmore, President of the National Phonograph Company, offered in evidence this morning, apparently relates largely to the "Knock Down" horn. What horn is referred to by that phrase?

A. That refers to the parabolic horn. We made a number of what we call the "Knock Down" horn, which was held together by screws. I understand that Mr. Gilmore at that time was attempting to make a horn that could be packed with the talking-machine in the original package, [168] and the Searchlight folding horn was the result.

RDQ. 132. Were you familiar with the patent law during the period from your first connection with the United States Horn Company down to the commencement of this litigation?

A. Only from the check-book end of it.

RDQ. 133. Did you understand the scope of the claims of the different patents owned or controlled by the United States Horn Company or the Searchlight Horn Company?

A. Only from what I was told by our attorney. I never made a study of it.

RDQ. 134. Referring to your statement made this

(Deposition of William H. Locke, Jr.)

morning in answer to XQ. 98 put to you by defendant's counsel, in regard to notification given to the National Phonograph Company of the alleged infringement of the Nielsen patent, please state what oral notification you gave to Mr. Gilmore or Mr. Pelzer on that subject.

A. It had always run through our minds that the talking-machine companies themselves would take on the manufacture of horns; and therefore I had tried to get the large manufacturers of horns to form one manufacturing concern and to pay me a royalty; but I have been unsuccessful in that event. Then I tried to get the talking-machine manufacturers themselves either to do business with me direct or take over my business; and my leading issue with them was that we had the only patent in existence that covered the flower horn; and, competitively, anyone that owned or controlled this patent would be very strong. Of course I know that they were in constant litigation [169] with each other, and I figured that if I made a connection of some kind with them I would practically do what I had endeavored to do with my competitors; but I was unsuccessful.

RDQ. 135. At the time of your first conference with Mr. Gilmore in regard to flower horn matters, had the National Phonograph Company adopted a horn to be sent out as part of its equipment?

A. No, they had never really adopted a horn, though they sent out a little 14-inch or 18-inch horn with each machine.

RDQ. 136. But they were not, at that time, regu-

(Deposition of William H. Locke, Jr.)

larly sending out a large horn? A. No, sir.

RDQ. 137. At that time who carried the large horns that were used by the users of phonographs—the phonograph companies or dealers and jobbers?

A. The dealers and jobbers bought their horns from the horn manufacturers, as well as the talking machines?

RDQ. 138. Do I understand that the dealers distributed these horns to the public without connection with the phonograph manufacturers? A. Yes.

RDQ. 139. At the time of your first interview with Mr. Gilmore, had the National Phonograph Company bought any flower horns?

A. I believe their export department did some business in flower horns with South America and Australia.

RDQ. 140. Was this fact referred to at the conference [170] between you and Mr. Gilmore?

A. I don't know about that. I sold the National Phonograph Company several thousand Searchlight horns for the same trade; that is, their foreign department.

Recross-examination by Mr. BULL.

RXQ. 141. Referring to the "Knock Down" horns that you have been asked about, and mentioned in the correspondence here in evidence, will you please explain the construction of that more fully?

A. The "Knock Down" horn consisted of these same four sections of the Searchlight parabolic horn, fastened together with three or four screws.

RXQ. 142. That is to say, instead of the sections

(Deposition of William H. Locke, Jr.)

being soldered together, as they are in the exhibit of the Searchlight horn, they were put together with screws?     A. Yes, sir.

RXQ. 143. Did you sell any of these?

A. Yes; we sold a thousand, I guess.

RXQ. 144. In other respects they were like this Searchlight horn?     A. Yes, sir.

RXQ. 145. Will you please explain more fully your answer to XQ. 71, and state what you have already stated—whatever the facts are? I simply ask you to amplify your answer.

A. After my negotiations with my competitors fell through, I started after the talking-machine manufacturers, among others the National Phonographic Company. The National Phonograph Company were at that time the leading factors [171] in the business. I met Mr. Gilmore and made experiments for him with my Searchlight horn, and my "Knock Down" Searchlight horn; and, four months later, with my folding Searchlight horn. The National Phonograph Company thought so well of it that when they notified the trade that they would make horns part of their equipment they negotiated with me to handle my folding horn exclusively as the horn which they would put out as part of their equipment, provided I could fill their order in time; but as I could not get the dies made in time I could not fill their order, and, therefore, I was compelled to do without their business.

RXQ. 146. You had come to a satisfactory agreement with them as to prices?     A. Yes, sir.



(Deposition of William H. Locke, Jr.)

RXQ. 147. Did they determine upon a contract or agreement with you?

A. Of course there was no written agreement. They had a factory at Glen Ridge, but they were not using it at the time. I visited that factory of the phonograph company to see if it would do for our particular business. As I say, there was no written instrument between us; but I believe that if we could have gotten our dies out in time we certainly would have done business.

Redirect Examination by Mr. DUNCAN.

RDQ. 148. When you were unable to get your dies out in time, and therefore had to give up the contemplated contract with the National Phonograph Company, did that [172] company itself manufacture horns and supply horns with its phonographs?

A. No, I made a contract with our two largest competitors—the Tea Tray Company, of Newark, New Jersey, and the Standard Metal Manufacturing Company—to manufacture the horns.

RRDQ. 149. Did the National Phonograph Company then make their horns part of the standard equipment of their talking machine?

A. Yes, they did.

RRDQ. 150. What horn did the National Phonograph Company make part of their standard equipment? A. The regular style horn.

The signature of the witness is waived by consent of counsel.

An adjournment was taken here, to resume (in the same office) at 2:30 P. M. same day. [173]

Office of Frederick S. Duncan, Esq.,  
73 Nassau Street, New York City, N. Y.

Wednesday, August 5, 1914.

Met (at 2:30 P. M.) pursuant to adjournment.

Present: Same as before.

**[Deposition of Christian Krabbe, for Complainant  
(Cross-examination).]**

CHRISTIAN KRABBE, having been produced by complainant for cross-examination, pursuant to order of the Court, and to notice to defendant's counsel, testifies as follows in answer to interrogatories by Mr. Bull.

Cross-examination by Mr. BULL.

XQ. 92. The purchase price which is named in the assignment from Nielsen to you of the patent in suit, is \$1,764.25. Did that sum cover the purchase of any tools or materials or accounts from Nielsen?

Mr. DUNCAN.—Objected to as irrelevant and immaterial.

A. It covered everything.

XQ. 93. That is, tools and materials on hand, and old accounts? A. Yes.

XQ. 94. Were you interested in the Searchlight Company before the United States Horn Company assigned its patents to the Searchlight Company?

A. No, sir.

XQ. 95. You held no stock of the company before that time?

A. Not in the Searchlight Company; no, sir:  
[174]

XQ. 96. How did the prices charged by the United States Horn Company for its flower horn compare

(Deposition of Christian Krabbe.)

with the prices charged by its competitors?

A. They were cheaper.

XQ. 97. Which were cheaper?

A. We sold our horn cheaper.

XQ. 98. Did you sell the flower horn?

A. Do you mean while the United States Horn Company was in existence? Do you mean Nielsen or the United States Horn Company?

XQ. 99. I mean the United States Horn Company.

A. It would be hard to tell exactly. I did not sell phonographs in my store any more. I had gotten out of the firm, as I expected a big thing out of this; and I looked further ahead. I had a little store on Broadway. I cannot remember exactly how the prices were at the time. Do you mean wholesale or retail?

XQ. 100. I am asking whether the prices of the United States Horn Company for its flower horns were higher or lower, or the same as the competitors.

A. About the same thing; that is as close as I can exactly remember it this minute.

XQ. 101. Were the flower horns that the United States Horn Company sold substantially like the flower horns which the standard companies sold?

A. Exactly the same as the Edison horn, except that the Edison horn came more to a point so as to prevent them from getting bent when put on top of each other. [175]

XQ. 102. The Edison Company, as I understand it, never made a horn.

(Deposition of Christian Krabbe.)

A. I mean, what they were selling. These are the "points" that I mean.

(The witness here refers to Complainant's Exhibit, "Edison Advertisement of Flower Horn," and to the points shown projecting at the big end of the horn.)

XQ. 103. If I understand you correctly, your flower horns were exactly like the flower horn shown in Complainant's Exhibit "Edison Advertisement of Flower Horn" except that it did not have the points at the extremities of the ribs, which were put there to enable the horn to rest on the points and prevent the horns marring each other when packed, is that right?

A. Yes, sir; that is what I mean.

XQ. 104. Did you make a profit on the horns that you did sell? When I say "you" I mean the "United States Horn Company."

A. I made a profit, yes.

XQ. 105. And the only reason that your company did not make money was because it did not sell enough horns?

A. No. The big concerns supplied the horns, and we could not sell them. They were making them in such enormous quantities that we could not compete with them. They commenced to cut the prices down.

XQ. 106. The fact is, as I understand it, the Edison Company did not supply a large horn with its machines until after the United States Horn Company ceased doing [176] business?

A. Oh, no. I have got to look that up. I think

(Deposition of Christian Krabbe.)

they furnished them before that time. The Tea Tray Company in New Jersey were making the horns, and the different supply houses got them, and made them in such large lots that the prices had come down. They made them by the thousand, and we had to make them only in a small way. They cut the prices.

The signature of the witness is waived by consent of counsel. [177]

Office of J. Edgar Bull, Esq.,  
141 Broadway, New York City, N. Y.

Thursday, August 6, 1914.

Met (at 11:00 A. M.) pursuant to notice.

Present: JOHN H. HILLIARD, Esq., for Complainant.

J. EDGAR BULL, Esq., for Defendant.

**[Deposition of Harry T. Leeming, for Defendant.]**

HARRY T. LEEMING, a witness produced on behalf of the defendant, being duly sworn, testified as follows:

Mr. HILLIARD.—I object to taking the deposition of this witness on the ground that the time within which depositions *de bene esse* may be taken by the defendant has expired, and I give notice that a motion may be made in due course to suppress the same.

Direct Examination by Mr. BULL.

DQ. 1. What is your name, age, residence, and occupation?

A. Harry T. Leeming, age 33 years; residence, Jersey City, New Jersey; occupation, Assistant Gen-



(Deposition of Harry T. Leeming.)

eral Manager of Thomas A. Edison, Incorporated.

DQ. How long have you been connected with the Edison Phonograph interests? A. Eight years.

DQ. 3. You are familiar with the type of phonograph which is commonly known as the "Cabinet"? [178]

A. I presume you mean the "concealed horn" type.

DQ. 4. Are you familiar with the "concealed horn" type of phonograph? A. Yes.

DQ. 5. Are such machines now manufactured and sold by the Edison Company? A. They are.

DQ. 6. What proportions of the sales of the Edison Phonographs are of the "concealed horn" construction? A. At the present time 99%.

DQ. 7. Do I understand that at the present time 99% of all phonographs, called the "Edison" phonographs, are of the concealed horn type?

A. The amusement machines, yes.

DQ. 8. When did the Edison Company first put out the "concealed horn" machines? A. In 1909.

DQ. 9. Are you familiar with the practice of the other phonograph companies, in a general way, as to what types of machines they are putting out at the present time? A. To some extent, yes.

DQ. 10. Will you state whether it is a fact that at the present time substantially all phonographs that are being sold, whether by the Edison Company or by the other companies, are of the "concealed horn" type?

A. Before I answer that I would like to ask this

(Deposition of Harry T. Leeming.)

question. By phonographs, I presume you embrace talking machines, graphophones and gramophones, in a general way? [179] The "phonograph," of course, is our own instrument; no other company puts out a phonograph.

DQ. 11. I mean to include all sound reproducing instruments by whatever trade name they may be known. A. Yes.

DQ. 12. Was the Edison Company the first to put out the "concealed horn" type machine, or did the other companies precede them?

A. The other companies preceded them.

DQ. 13. Will you please produce standard forms of horns which are now used by the Edison Company with its phonograph?

A. I produce them here now.

(The two horns produced by the witness are offered in evidence and marked "Defendant's Exhibits, Concealed Horn No. 1, and Concealed Horn No. 2.")

Mr. HILLIARD.—Objected to as immaterial.

DQ. 14. Will you please explain the respective use of these two horns?

A. The horns of the character of exhibit No. 1, are used in disc concealed instruments. The horns similar in character to exhibit No. 2 are used in concealed-horn cylinder instruments.

DQ. 15. These, I understand, are standard shapes of horns which are made in different sizes for different size machines? [180]

A. In a general way, yes, sir.

(Deposition of Harry T. Leeming.)

DQ. 16. Will you please produce samples of horns commonly known in the talk machine trade as B. & G. horns and brass horns?

A. I produce them here now.

(The two horns produced by the witness are offered in evidence and marked "Defendant's Exhibits, B. & G. Horn and Brass Horn.")

DQ. 17. For how long a time have you been familiar with horns of the character just produced?

A. Eight years.

DQ. 18. During that whole time?

A. I knew horns of that character prior to that, but I have no definite knowledge.

Mr. BULL.—Direct examination closed.

Cross-examination by Mr. HILLIARD.

XQ. 19. Is this "Defendant's Exhibit, Brass Horn," called the "spun brass" horn?

A. By means of identification, it is.

XQ. 20. Are you using the phrase "spun brass horn" in the trade sense, or in what sense?

A. We generally term those by inches. For instance, 56-inch or 40-inch horns, of that character; or brass horns.

XQ. 21. You call that merely a brass horn?

A. Brass horn would be sufficient for identification, if you gave the inches. [181]

XQ. 22. What is or was a spun brass horn?

A. A spun brass horn is where you have the bell either drawn or spun, the stem being joined by a seam. You naturally could not spin or draw a horn

(Deposition of Harry T. Leeming.)

of that length. (Pointing to the largest horn in evidence.)

XQ. 23. At any time, to your knowledge, was there such a thing as an all spun brass horn?

A. Not to my knowledge, although I do not doubt that some of the short horns for the very cheap instruments were entirely spun, on account of their length permitting it. [182]

**[Deposition of Albert C. Ireton, for Defendant.]**

ALBERT C. IRETON, a witness produced on behalf of the defendant, being duly sworn, testifies as follows:

Mr. HILLIARD.—Same objection and same notice as with the previous witness.

Direct Examination by Mr. BULL.

DQ. 1. What is your name, age, residence and occupation?

A. Albert C. Ireton; age 50 years; residence, East Orange, New Jersey; occupation, Sales Manager, Amusement Phonograph Sales Department, Thomas A. Edison, Incorporated.

DQ. 2. How long have you been connected with the Edison interests? A. For fifteen years.

DQ. 3. In what capacity?

A. First as salesman; then assistant sales manager; now as sales manager.

DQ. 4. What proportion of the talking-machines made and sold by the Edison Company at the present time are of the concealed horn type?

A. Practically all.

(Deposition of Albert C. Ireton.)

DQ. 5. When did the Edison Company first introduce that type of machine?     A. In 1909.

DQ. 6. When the Edison Company introduced that type machine, were other companies making and selling them for some time previous?

A. Yes. [183]

DQ. 7. What companies?

A. The Victor Talking Machine Company.

DQ. 8. Do you recognize the horns which are now before you, marked "Defendant's Exhibits, Concealed Horn No. 1 and Concealed Horn No. 2" as the standard phonograph horns of the present Edison talk concealed-machine?     A. I do.

DQ. 8. Please look at the horns which have been offered in evidence, marked "Defendant's Exhibits, B. & G. Horn and Brass Horn," and state whether you are familiar with these types of phonograph horns, and how long you have been familiar with them?

A. I am familiar with them, and have been ever since they were introduced into the talking-machine industry.

DQ. 10. How long ago was that?

A. I think fifteen years. [184]

**[Deposition of Rudolph M. Hunter, for Defendant.]**

RUDOLPH M. HUNTER, a witness called on behalf of the defendant, being duly sworn according to law, deposes and says, in answer to interrogatories propounded by Mr. Acker as follows:

Q. 1. Please state your name, age, residence and occupation.



(Deposition of Rudolph M. Hunter.)

A. Rudolph M. Hunter; in my 60th year; residence, Philadelphia, Pa.; occupation, consulting engineer and solicitor of patents, with particular reference to all matters relating to inventions.

Q. 2. Please state what experience you have had in connection with musical instruments, and more particularly to the talking machine art as should qualify you to testify as an expert in the present case.

A. I am professionally educated in the technical arts and sciences and have, during the last forty years, had a great deal of experience in the construction of apparatus of various kinds in general manufactures and in use for testing and original research work. In respect to the subject matter of talking-machine art, I might, say that aside from the general knowledge I have upon the development of this art, I also have a general knowledge upon the subject of acoustics and have employed that knowledge not only in a business way but as a musician, having played six or seven instruments aside from devoting a great deal of time to singing. In respect to the talking-machine art, I have been familiar in its development from the time of the Edison tin-foil records in 1878 and '79 and from that time on have been familiar with all the material developments, not only from a matter of study but my actual use of instruments. I have also made a number of improvements in this art myself, but my attention has been more particularly directed in expert capacity in connection with various suits which

(Deposition of Rudolph M. Hunter.)

have been in progress during the last fifteen years, during which time there has not been any moment in which I have not been more or less occupied in respect to such litigated matters, [185] aside from the time which I have devoted in the consideration of questions involving the scientific subject of acoustics with respect to the gradual development of that art. I have been engaged in patent business since 1871 and have had occasion to prepare and prosecute thousands of applications for letters patent, many of which have related to the talking machine art, and as far back as about 1887 I had occasion to publish some articles relating to improvements of my own in this art. Aside from the attention which I have given to the inventions and patents of others, I have made a great many inventions of my own, upon a portion of which I have taken out about 300 letters patent. For the last 35 years I have been constantly engaged in giving expert testimony in litigated matters in the courts and a large portion of my time is devoted to this branch of my profession.

Q. 3. Have you examined United States Letters Patent No. 771,441, granted P. C. Nielsen under date of October 4, 1904, for an improved horn for phonographs or similar machines and if so please state whether you understand the invention disclosed therein?

A. I have carefully examined the letters patent referred to in the question and fully understand the invention as disclosed therein.

Q. 4. Referring to the said letters patent, I direct

(Deposition of Rudolph M. Hunter.)

your attention to the following matter mentioned therein and contained between lines 13 and 19, page 1 of the printed specification which reads as follows “the object thereof is to provide a horn for machines of this class which will do away the mechanical, vibratory, and metallic sound usually produced in the operation of such machine, and also produce a full, even, and continuous volume of sound in which the articulation is clear, full, and distinct.” And also to the language contained between lines 71 and 76, printed page 1 of the specification which reads as follows: “and it is the longitudinal ribs B-2 which contribute mostly to the successful operation [186] of the horn, said rib serving to do away with the vibratory character of horns of this class as usually made and doing away with the metallic sound produced in the operation thereof,” and will ask you to state from your knowledge and experience relative to horns as applied for reproducing purposes to talking machines as to the soundness of the statements referred to in the said letters patent of which I have quoted relative to the construction of the horn set forth in the said letters patent doing away with or obviating metallic vibration as stated in the said letters patent to take place in connection with the horns of the prior art.

By Mr. HILLIARD.—I object to the question on the ground that it calls for a conclusion of the witness without his having stated his conception of the structure called for and described in the patent and on the ground that he has stated no facts and no

(Deposition of Rudolph M. Hunter.)

facts are assumed on which he bases his opinion.

By Mr. ACKER.—In view of the objection above noted the question is temporarily withdrawn.

Q. 5. I understood you to testify that you had examined the Nielsen letters patent in suit and understood the invention disclosed therein, and I would ask you to state and describe the invention disclosed to you by the said letters patent?

By Mr. HILLIARD.—I object to this question also on the ground that the testimony called for infringes upon the province of the court.

A. The invention of the patent is perhaps most concisely stated in the third claim thereof, which reads:

“3. A horn for phonographs and similar instruments, said horn being larger at one end than at the other and tapered in the usual manner, said horn being composed of longitudinally-arranged strips secured at their edges and the outer side thereof at the point where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.”

From this statement of the invention, it is apparent that the [187] general shape of the horn does not involve novelty, as it is there stated that it is tapered in the “usual manner”; but this horn structure is to be made of longitudinally-arranged strips which are to be secured together by outwardly directed ribs. The language states that these ribs are to be at the outer sides and at the edges of the strips.

(Deposition of Rudolph M. Hunter.)

While the patent does not describe exactly just how these outwardly-directed ribs are secured together, it is to be presumed that they are soldered together, as is customary in joining these metal parts where no other method is described. My understanding therefore is, that each strip is provided along its longitudinal edges with outwardly-directed flanges and that these flanges are soldered or otherwise suitably secured together to provide "longitudinal ribs" upon the outer surface of the horn. Incidental to providing these longitudinal outer ribs produced by the flanged edges of the strips in forming the usual tapered horn shape, the plates are described as being tapered so that the larger or bell end of the horn may be greatly larger than the smaller end. There is nothing in the third claim which refers to the tapered construction of the strips, except as it may be implied. In the second claim, these strips are stated as being tapered from one end of said horn to the other, but in this claim, as in the third claim, the edges of the strips are to be outwardly flanged, whereby there is provided the longitudinally-arranged ribs. The essential feature of the construction which I find disclosed in the patent, lies in the provision of the outwardly directed ribs which are indicated clearly in Fig. 3 at  $b^2$ , said ribs being each composed of two outwardly-directed abutting flanges  $b^3$  soldered or otherwise secured together. I further understand that the intent and purpose of this construction, in the mind of the patentee, was to provide a rigidity to the



(Deposition of Rudolph M. Hunter.)

horn structure which [188] was to prevent it from vibrating and thereby impressing upon the sound waves being reproduced extraneous sounds which would have the color or timbre of the metal of which the horn is formed. As shown in Fig. 3, the horn is built up of 12 of these strips, so that a transverse section would show the horn as approximately circular, especially at the smaller end thereof, but I do not understand that the patentee restricts himself as to the number of these strips. From the language of the specification it is quite evident that the patentee intended to provide clearly pronounced ribs which shall have sufficient rigidity to prevent the vibration of the horn itself, or at least to such an extent as would do away with what he terms "the mechanical, vibratory, and metallic sounds usually produced."

Q. 6. From your study of the letters patent in suit, and the invention therein disclosed, what feature is it of the horn which in the mind of the inventor would "do away with the mechanical, vibratory and metallic sounds" and do away "with the vibratory character of horn of this class as usually made and doing away with the metallic sound produced in the operation thereof?"

By Mr. HILLIARD.—I object to the question on the ground that what was in the mind of the inventor must be determined from the specification and patent itself and that the question should be confined within such limits.

(Deposition of Rudolph M. Hunter.)

By Mr. ACKER.—In view of the objection above noted the question is modified so as to read—What feature is it of the horn which you find to support the alleged claim of the inventor would “do away with the mechanical, vibratory, and metallic sound” and equally so do away “with the vibratory character of the horn of this class as usually made and doing away with [189] the metallic sound produced in the operation thereof”?

A. I find that in the specification the patentee provides the outwardly-directed ribs with the intention of accomplishing these results and in these respects he states: “it is the longitudinal ribs  $b^2$  which contribute mostly to the successful operation of the horn, said ribs serving to do away with the vibratory character of horns of this class as usually made and doing away with the metallic sound produced in the operation thereof.” I understand, from his words “contribute mostly,” he recognized that while he has provided the outwardly-directed rib to give the rigidity, there is the provision in the construction of forming these ribs of flanges outwardly extending from the side edges of each of the strips. He unquestionably, by the language I have quoted, considers that the ribs as means of preventing vibration of the horn were the essential feature of his invention.

Q. 7. In view of your testimony in answer to questions 5 and 6, I will ask that question 4 be read to you and answered be made thereto?

(Question re-read to the witness.)

(Deposition of Rudolph M. Hunter.)

A. I have given the subject matter of the Nielsen patent and the claims, as to novelty of invention therein, very careful consideration, not only from a study of the patent itself taken in connection with my knowledge of applied acoustics, but also after having made a large number of tests and experiments; and it is my opinion, based upon this foundation, that the statements contained in the patent as to the results to be secured by the construction therein described and claimed is not warranted by the facts and that the results alleged to be accomplished are in fact *not* accomplished.

As a matter of fact, it is not possible to brace, by ribs or otherwise, a sheet metal horn so that it will not produce vibrations and thereby sounds due to its own construction. Even [190] though the horn were of a solid mass of cast metal it would still vibrate to some extent, but would possibly not produce any appreciable effect upon the sound waves from the reproducer which would be distinguished by the ear. However, when making the amplifying horn of sheet metal there would be no possible way of bracing it to prevent its own natural vibration, although to some extent these vibrations might be modified by proper construction of the horn to give exceptional rigidity. This, however, is not accomplished by the construction which is illustrated and described and specifically defined in the claims of the Nielsen Patent in suit and I will explain more in detail my reasons for the expression of this opinion, inasmuch as it is diametrically opposed to the state-

(Deposition of Rudolph M. Hunter.)

ments which are found in the Nielsen Patent.

If we consider a plate as having bounding edges, the metal is in the best form to be set into vibration. In the Nielsen Patent these strips are provided with flanges along their edges, but these flanges are relatively of small vertical height as compared to the transverse width and area of the strips so that while in a measure they give rigidity to the edges of the plates they do not in any manner interfere with the free vibration of the plates between the flanges. Moreover, the flanges of adjacent plates being soldered together does not interfere with the freedom of vibration of the various plates or strips making up the horn, because the amplitude of vibration is relatively small and the yielding character as well as the nonvibrating character of the solder joining the plates does not interfere with the independence of the plates as separate vibrating elements. These plates, in the actual horn structure, are free to vibrate and vibrate very readily. In my experiments with horns of this character, I found that the vibrations along the line of the ribs was very marked. The plate between the ribs also vibrated very freely, said vibrations being greater toward the large end of the horn than toward the [191] smaller end. Moreover, in the exploration of these vibrations and their extent, I found that the nodes or nonvibrating lines in the plates were numerous and that the rib portions did not produce less vibrations than other portions of the plate due to their natural nodal lines which is present in all plates under vibration, the formation

(Deposition of Rudolph M. Hunter.)

of these nodal or nonvibrating lines in any plate is very complex and varies with the shape and thickness of the plates, as well as the extent of the vibration induced in the plate from the extraneous source, whether it be by vibrating the plate mechanically or by sound waves impinging thereon as takes place in a sound reproducing instrument such as under consideration. In considering the plate surface of an amplifying horn and without attempting to specifically arrange the nodal lines thereon, we may for purposes of illustration assume that the nodal lines will run longitudinally and also transversely, but that the number of those nodal lines will increase transversely considered as the larger end of the horn is approached and moreover, that these nodal lines will vary with wonderful rapidity in view of the production of over-tones or harmonics which are the result of the constantly varying impulse which is given to the plate surface to vibrate owing to the different character of the music or sound which is being projected into the small end of the horn from the reproducer. However, no matter how complex these nodal lines may be, the sheet metal between them is in a state of vibration and no arrangement of ribs such as described in the Nielsen Patent, can possibly prevent such vibrations which takes place between the nodal lines. While the ribs may effect the disposition of the nodal lines, as they undoubtedly do, since they are the lateral edges of each strip, nevertheless these ribs and those edges of the plates or strips vibrate simultaneously as constituting the free



(Deposition of Rudolph M. Hunter.)

edges of the plate, very much the same as a plate [192] having all of its edges free would vibrate under mechanical or induced vibrations. In actual experiments, the free edges of the plates are always in a state of vibration while the nodal points are slightly removed from these edges and such nodal points are further repeated across the plate. The manner of uniting the flanges in the Nielsen structure whereby there are a large number of plates or strips in making up the full circumference of the horn there is great tendency to increase the vibration permissible over what would be the case if such plurality of plates were made as of one integral plate bent into the general shape of the horn, substantially as indicated in Fig. 3 in cross-section without the ribs b<sup>2</sup>. In my experimenting with two horns of substantially the same shape but in which one of the horns was in strips secured together by the flanged side edges forming ribs and the other with the continuous plate bent at the change of angle in the circumference and without any joint or ribs, I found that there was far less vibration in the horn without the ribs than there was in the horn with the ribs adjacent to these bent portions corresponding to the position of the ribs in the Nielsen Patent. As a matter of fact, in the horn without the ribs the continuity of the plate being present and modified by an angular bend, I found that there was far less vibration along the ridge of such bend than there was upon the rib formed upon the similar bend in the other horn made of the flanged strips and outwardly ex-

(Deposition of Rudolph M. Hunter.)

tending ribs to correspond to the Nielsen Patent. This was in exact accordance with what I would have expected because in the one case, notwithstanding that the plates were soldered tightly together, they were nevertheless independent plates when we consider a high state of vibration to which such plates are subjected, while on the other hand the plate which was continuous had no free edges and therefore the angular bend given to it acted very materially to stiffen it to such an extent as to prevent free vibration and under these conditions [193] such line of bending acts as a nodal line, and would be largely equivalent to a plate at its point of clamping, namely, the point by which it may be held, whether at a single point or along a line. Between the flanges on the one part and the mere bend in the plate on the other (considering the two horns), the plates were set into a state of vibration under the normal reproduction of sound and of course, the nodal lines which I have before explained, occurred in these plates but naturally as would be expected, were differently positioned, because in the one case a nodal line was produced along the bend in the horn without the ribs, whereas in the other case, the ribs were free to vibrate, being formed by edges of the strips and hence a nodal line would not be formed thereat. These experiments indicated that the alleged operation or result set out in the Nielsen Patent was not correct as a matter of fact. It did not occur in the construction of a horn ribbed by employment of flanges secured together as therein described.

(Deposition of Rudolph M. Hunter.)

As a further experiment along the line of the alleged invention of the Nielsen Patent, I experimented with several other horns. One of these horns was known as the Villy folding horn of the general character illustrated, for example, in patent No. 739,954 of 1903, "Defendant's Exhibit Villy Patent"; but in the connection between the strips, the hinge was made by alternate loop portions brought into alinement and secured by a long wire, similar to a hinge. The construction provided a very pronounced outwardly-directed series of ribs as well as a series of inwardly-directed ribs. In exploring the vibrations of this horn I found that the vibrations were very free along these lines of the ribs owing to the fact that, as in the case of the Nielsen Patent, the ribs were formed along the edges of the plates or strips and it was quite evident that there was not a particle of rigidity produced sufficient to cause nodal lines to be formed along these [194] ribs. On the other hand, the vibrations were very much greater than would have happened in a horn which was of continuous metal throughout its circumference or of such with one or two ordinary seams.

I also made some experiments with two specially constructed horns, one of which was formed of a relatively straight cone with a bell-mouthed end, such as has been commonly called in this case the B. and G. type, and the other of a construction similar to the general form of the Nielsen Patent with the exception that the seams in this case were constructed

(Deposition of Rudolph M. Hunter.)

similarly to the seams employed in the defendant's horn; that is, an ordinary flat inter-engaging seam such *as used* in sheet-metal work. In these two comparative horns, I took the precaution to have them made of the same surface area so that both of the horns had the same surface to be put into vibration. In the making of these tests, I used the same records and the same reproducing machine, so that there was nothing but interchange of the horns to produce different results. I employed sound records of various characters, some of which reproduced vibrations in the horn much more readily than others, to ascertain if possible, whether there was impressed upon the reproduced music the over-tones due to the presence of the metal of the amplifier more in the case of one horn than the other; and after long and laborious experiments, I came to the conclusion that there was no difference in favor of the horn having the strips united by the longitudinal seams (as in the defendant's horn in controversy) in the production of less metallic sound due to the horn than in the case of the B. & G. horn.

Adjourned for recess until 2 P. M.

Met after recess.

WITNESS.—(Continuing.) [195] In connection with the tests on these two horns last referred to, one of the horns, namely, the B. & G. horn, there was only the longitudinal seam in the building up of the cone and one circumferential seam between the end of the cone and the beginning of the bell, whereas in the other of the horns there were a plurality of longitudi-

(Deposition of Rudolph M. Hunter.)

nal seams for uniting the longitudinal segments. These seams were formed by inter-engaging and flattening the seam portions down into the plane of the section so that there was no ribs in the sense of projections standing radially to the general surface of the horn; but there were thickened portions due to the plurality of thicknesses of the sheet at their line of engagement. This inter-engagement forming the seams was not soldered. In the experiments with these two horns, I found that the vibrations along the line of the seams in the horn last described, was quite pronounced, though somewhat more subdued than the central or free portions of the strips, because of the fact that they were very tightly made and had more or less interference by overlapping of one sheet upon the other. The overlapping had a tendency to produce some interference. This horn did not show, by the tests, that there was any prevention of free vibrations in the surface metal and so far as the reproduction was concerned, the tones produced by the horn having the multiplicity of sections was substantially the same as the reproductions of the B. & G. horn structure. Insofar as impressing of additional tones, due to the metal of the horn, upon the reproduced sound were concerned. While there were certain differences in the general characteristic of the sounds reproduced, this was due to the difference in the shape of the sonorous body of air, owing to the fact that the bell in the one case was much larger in diameter than the bell in the other case. In other words, the difference in the length and diameter of



(Deposition of Rudolph M. Hunter.)

horns vary the tone emitted from the horn without any consideration [196] of the matter of impressing upon the sound vibrations of the reproducer of extraneous sounds due to the special vibration of the metal of the horn itself. It, therefore, is not to be assumed that the fundamental characteristic reproduction of one horn is to correspond exactly to that of another horn, as this will vary with different horns and yet not involve in any manner the question of what material the horn is made of or what vibrations may be set up in the horn itself. The experiments with these horns demonstrated clearly to my mind that the defendant's horn structure did not have ribs longitudinally arranged which prevented the vibration of the horn to overcome the production of sound due to the vibration of the horn itself and therefore did not embody the construction of ribs which could possibly produce the result alleged to be required in the Nielsen Patent in suit. In these two horns, the metal surface available for being put into vibration was made the same, so as to permit a more careful comparison as to the advantage of one construction over the other than could be had if the horns were of different sizes, but this identity of surface area does not change or modify the general principle of operation of these horns, irrespective of the size. In both of them, there was full vibration of the metal surfaces and of the seams, as was also present the nodal lines of quiescence which I have before referred to in connection with the other horn. It is an utter impossibility for any horn of flexible

(Deposition of Rudolph M. Hunter.)

metal to act as an amplifier for strong sound vibrations without producing these metal lines as boundaries to the surfaces of vibration. In addition to the particular horn having the plurality of sections which I have just been referring to, I also experimented with a horn of the same character but of much larger size, and the results with this horn were equally positive in respect to the vibration which was had at the seams when the sounds transmitted into the horn [197] were of sufficient amplitude. In all of these experiments it was noticeable that in soft music, such as the violin and in speaking reproduction, as well as in singing that was not too vigorous, there was very little vibration of the horn structure and, therefore, there were produced no objectionable secondary or over-tones from the horn. When violent music was transmitted in the horns, such as band pieces which contain the resultant of sound from brass instruments, there was a very pronounced vibration of the horn, and in this case, there would be produced some of the higher harmonics which would be impressed upon the reproduced music, but as they were of the same general character as the source of the music, such vibrations and tones produced thereby was not objectionable. These excessive vibrations are not produced by singing or stringed instruments.

Considering these various experiments, supplemented of course by numerous experiments which I have before made from time to time in respect to reproduction of sound by the amplifying horn, I am

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thoroughly convinced that there is nothing in the construction of horn embodied in the defendant's structure which will prevent vibration of the horn "to do away with the vibratory character" of the horn and "do away with the metallic sound produced in the operation thereof," namely, the essential objects of the Nielsen Patent in suit, and as particularly recited in lines 71 to 77 inclusive of page 1 thereof.

Q. 8. From your experiments as made with the horn of the defendant's construction as involved in the present suit, did you find the mechanical vibrations reduced or minimized to an extent greater than such mechanical vibrations were minimized in the horn of what you have termed the B. & G. construction?

A. I did not. The making up of the horn in sections and connecting them by mechanical longitudinal seams in the horn of defendant's [198] structure, enabled these sections to vibrate more freely than the same area of sections would have vibrated had they been of one continuous sheet of metal bent into the shape of the horn. Furthermore, in the case of the B. & G. type, the continuous surface of the metal curved in the form of a cylinder makes the construction more rigid against vibration than does the structure employing flat surfaces as in the defendant's horn structure, so that there was no minimizing or reducing of mechanical vibrations in the horn of defendant's construction over the B. & G. construction.

(Deposition of Rudolph M. Hunter.)

Q. 9. With the Nielsen Patent No. 771,441 in suit, before you, you will please examine the same and state what foundation you find therein in support of the contention that the construction of the horn therein disclosed will minimize the tintinnabulation or mechanical vibrations and reduce the metallic sound?

A. I find nothing in the Nielsen Patent, in suit, except the mere unsupported statement of the inventor that the ribs which he described accomplished or are intended to accomplish the said result.

Q. 10. Eliminating or disregarding the appearance to the eye created by the shape of the horn of the Nielsen Patent, what advantage does the horn of the Nielsen Patent possess as an amplifier of sound over the horn of the prior art and as exemplified for instance, by the horn designated by you as the B. & G. horn of the prior art?

By Mr. HILLIARD.—Objected to on the ground that the defendant is estopped from denying the utility of the structure of this patent.

A. None whatever. The general shape of the horn is, as the patentee says, a shape “tapered in the usual manner” and which is the conventional shape of horns of musical instruments, they being curved from one end to the other, the horn of the Nielsen Patent is provided with ribs extending outwardly and adapted to this [199] general shape of horn, and as I have pointed out in my deposition, these ribs do not prevent the vibration of the horn as contended

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for by the patentee, Nielsen, and as recited in the specification. On the other hand, the construction employed in forming the ribs, tends to make the horn more capable of vibration by subdividing the metal into a number of plates or sections and, therefore, the alleged advantage of the structure is not present, and, consequently, there is no advantage in the shape of the horn of the Nielsen Patent over the horns of the prior art.

Q. 11. You say there is no advantage in the shape of the Nielsen horn over the horns of the prior part. Please state whether there is any advantage in the Nielsen horn as an amplifier of sound over the horns of the prior art as exemplified by the B. & G. horn for instance?     A. No, there is not.

Q. 12. In your answer to question 7, you repeatedly referred to experiments made by you of horns of different types, and on which you state your conclusions or opinion as expressed in said answer. I will ask, if you have in your possession the instrumentalities by which these experiments were made that you produce the same, and explain for the benefit of the Court exactly how the experiments were made and the nature of the comparison made by you between the horns of the different types utilized by you in making your experiments?

A. I have the various horns and instrumentalities by which these experiments were made, and I will now produce them. I herewith produce the talking machine proper and six horns and also a number of



(Deposition of Rudolph M. Hunter.)

sound records as follows: [200]

German Fidelity March.....	No. 17,577-B
National Emblem March.....	No. 17,577-A
Angel's Serenade.....	No. 88,434
Romance in E flat.....	No. 74,375
Out to Old Aunt Mary's.....	No. 70,078
Celeste Aida .....	No. 88,127
The Littlest Girl, Part 1.....	No. 70,058
Du Du Liejst mir in Herzen.....	No. 87,182
To Spring .....	No. 64,264

The horn which I now refer to is the horn designated by me as B. & G. type and which I shall hereafter refer to as "Horn A."

The next horn which I refer to is the horn of defendant's construction which has the same area of sheet metal as the horn just referred to, which I have designated as "Horn A" and this last horn of defendant's construction I will hereafter refer to as "Horn B."

The next horn which I now refer to is the defendant's horn of a larger size and I will hereafter refer to this as "Horn C."

The next horn that I now refer to is a horn having a plurality of strips and with the radial ribs between the strips corresponding to the construction of the Nielsen Patent in suit and I will hereafter refer to this horn as "Horn D."

The next horn that I refer to is the construction of horn which corresponds in general shape to "Horn B" but without the ribs and this I will hereafter refer to as "Horn E."

(Deposition of Rudolph M. Hunter.)

The remaining horn which I now refer to is the Villy horn and hereafter I will refer to that as "Horn F."

In addition to these horns, machines and records, I employed as a convenient manner of exploring the sound waves, a mechanical microphone which I found answered the purpose, as [201] I did not provide an electrical microphone within the length of time available. The instrument employed was essentially a sound-box of the "Exhibition" box construction similar to that upon the machine in and with a long flexible stylus of wire in place of the needle. The aperture at the rear of the sound-box was employed as an ear tube for delivering the sound vibrations to the ear and the wire was employed to be moved over the surface and from place to place in exploring the nature and extent of the vibrations upon the surface of the horns and along the seams and ribs as the case may be. In utilizing this microphone attachment, the best results were obtained by interrupting the contact so that the nerves of the ear were given the result with a fresh impulse with each contact and were, therefore, not tired by continuing buzzing owing to repeated vibrations over long periods. In this manner the touching of the stylus to the surface of the horn would deliver to the ear the effect of the vibrations which were existing at that moment and this was maintained only for a small interval and then repeated so that the effect of the vibrations were fully impressed upon the nerves of the ear without

(Deposition of Rudolph M. Hunter.)

fatiguing them. If the stylus was kept in contact with the surface and dragged from place to place, the distinction between the change could not be as apparent as taking short impressions of the vibration and repeating them over the different portions of the horns, as may be desired. In this manner, points of no vibration or of pronounced vibration were easily detected. In making these experiments I made them, using the different sound records which I have referred to in this answer, some of which were speaking voices, others singing from soft tones to rich vibrous character, others were of violin and again others were of brass bands. In exploring the surfaces, I not only explored the region of the seams and the ribs but also the surfaces longitudinally and transversely. [202]

Owing to the fact that sound records continue to reproduce over a considerable period of time covering any one selection, it is not to be expected that a satisfactory comparison would be had by employing different portions of the record in making two comparisons between different horns, so that I was very careful to select certain definite parts of each sound record which might be considered as characteristic of the reproductions of any particular record, and to repeat these in my tests of comparison, that the clearly defined impression with tests from one horn could instantly be compared with the similar expressions received from the other horns to be compared, just as quickly as the horns could be transferred from the

(Deposition of Rudolph M. Hunter.)

sockets. In this manner, there was no necessity of carrying the impressions of long reproductions and I repeated these experiments over different parts of the record and repeatedly over the same parts so that I might not be deceived in the effect received in my ear during these series of experiments.

The two horns which were intended to have the same surface or area and which were especially designed for a more immediate comparison by general reproduction upon the ear, are those which I have marked "A" and B," the "B" horn being the horn of defendant's structure. The vibrations in this horn for loud music was very pronounced, not only along the surfaces between the seams but along the seams, but for light music and for reproduction of speech there was very little vibration because of the nature of the reproduced sound, which did not have sufficient force to put the metal into pronounced vibration. As between the horns "A" and "B," it is my opinion that the horn "A" had less vibration than the horn "B," and this is as it would be expected to be, because of the continuous curved surfaces of the main body of the horn, they being true circles the tendency to expand and contract is more difficult of accomplishment than in cases where the surfaces [203] are made up of flat transverse lines between the segments. In case of the horn which I have marked "C" which is *of* also of defendant's construction, the same tendency to vibrate along the surfaces between the seams and on the seams was present as in

(Deposition of Rudolph M. Hunter.)

the smaller horn "B" of defendant's construction, but in this case the tendency to vibrate is greater because the horn is larger and consequently the sonorous body and the power exerted thereby was greater. The horn which I have marked "D" corresponds in principle to the horn of the Nielsen Patent, it being made up of a plurality of longitudinal strips, of tapered from one end of the horn to the other, the said strips having their side edges flanged and united to form the outwardly projecting ribs. The horn "E" which is of the same general character as the horn "D" but of continuous metal without the ribs, was employed by me by way of comparison with the horn "D" and as I have before stated, the rib portions of the horn "D" vibrated to a greater extent than did the corresponding unribbed portions of the horn "E." In other words, the making of the horn in separate sections and uniting these sections to form the ribs, produce a tendency to greater vibration of the horn structure than where the surfaces are connected integrally from one continuous piece of metal. I consider that this comparison of the horns "D" and "E" very clearly proves that the ribbed construction of the horn following the principle of the Nielsen Patent in suit, increases the capacity for vibration instead of nullifying the tendency as stated in the patent. The remaining horn "F," while of the same general character in case of the horn "B" and "C" showed very pronounced vibration along the hinged joints which correspond to the seams between



(Deposition of Rudolph M. Hunter.)

adjacent strips or sections. This horns was *particular* rich in vibration notwithstanding that the union between the several sections provided not only inwardly but outwardly directed raised [204] or ribbed portions throughout the length of the horn.

Q. 13. How do you account for the fact that the horn of the Villy construction which you have marked "F" produced greater mechanical vibrations than any of the other horns tested by you?

A. There are several reasons for this, one of which is that the metal of the horn is comparatively thin and the nature of the ribs between the several sections is not as rigid as if said sections were soldered. The result is that these various longitudinal strips or sections more nearly approximate separate plates.

Q. 14. Of the six horns tested by you and produced, which of the several horns from the tests made by you produce the least amount of mechanical vibration or tintinnabulation?

A. In my opinion, the horn "A" produced the least vibration, namely, the B. & G. horn.

Q. 15. For what length of time have you known of the horn which you have designated as the B. & G. and marked as horn "A" been known to you in connection with the talking machine art as an amplifying horn?

A. Horns of this character have been known for about 25 years.

Q. 16. In making the tests which you have referred to for comparison relative to such mechanical vibra-

(Deposition of Rudolph M. Hunter.)

tions as may exist in and between the different horns, did you employ the same talking machine and the same records for each horn? A. I did.

Q. 17. Have you the machine in connection with which the tests were made?

A. I have and herewith produce the same. The machine produced being one of the machines of the Victor Talking-Machine Company, Style V-V, No. 57,222, Type B.

Q. 18. And have you the records on which the tests were made?

A. I have and herewith produce them.

Mr. ACKER.—I shall offer in evidence the horns produced [205] by the witness and testified to as having been employed in connection with the experimental tests referred to in his deposition and ask that the same be marked respectively Defendant's Horn Exhibits "A," "B," "C," "D," "E" and "F."

I also offer in evidence the machine employed by the witness in making the tests referred to in his deposition and ask that the same be marked Defendant's Exhibit Talking Machine "G."

I also offer in evidence two boxes of records produced by the witness as having been the records employed in connection with the making of the said tests and ask that the same be marked Defendant's Exhibit "H," Eight Victor Records.

By Mr. HILLIARD.—I object to the introduction of each of the exhibits as immaterial.

Q. 19. Mr. Hunter, from your knowledge of the

(Deposition of Rudolph M. Hunter.)

talking-machine art, please state the action of recording the voice or musical sounds and the reproduction of the same from the record on a talking machine.

A. In the art of recording and reproducing sounds certain fundamental principles must be kept in mind if reproduction is to be a true delivery of the sounds which were recorded. The greatest difficulties in making a true reproduction can be traced back to the recording. If the recording is accurately done, the reproduction will be approximately perfect, irrespectively of so-called differences in the amplifying horn structures. To make the essential features of recording and reproducing perfectly clear, I will briefly explain the nature of the processes and then indicate the particular things to be kept in mind and in what particulars the difficulty of accurate reproductions arise. In general, recording is accomplished in this manner;—a prepared wax disk is simultaneously rotated and fed transversely to a recording stylus so that it will tend to cut a spiral groove; and during this mechanical operation of engraving the stylus is put [206] into a state of vibration by means of a diaphragm, very similar to the diaphragm of a sound-box upon a reproducing machine. This recording instrument is suitably balanced so that the point of the graver or stylus cuts into the wax surface for an exceedingly small distance. The resistance of the wax being just sufficient to support the weight of the recorder except for the penetrating tendency of the extreme point of the graver or cutting tool. In front of the recorder is a small conical tube, the small end

(Deposition of Rudolph M. Hunter.)

being directed close to the recorder diaphragm, and the larger end of the tube opens toward the *signer* to band according to what is to be recorded. Assuming that the artist sings into the large end of the conical tube, the tones produce vibrations of different amplitude and these, passing through the conical tube impinge, upon the diaphragm of the recorder and cause a corresponding vibration therein which in turns is transmitted to the stylus or graver, so that instead of the spiral groove cut in the wax being a true spiral, such groove has impressed upon it the various sound waves. The resultant spiral groove, such as is seen in the ordinary sound record, is a laterally undulating groove, namely, one with lateral sinuosities, the amplitude of which is the resultant of the primary tones together with the overtones which are sent into the recorder by the voice of the artist. The wax record so produced is employed as a basis from which suitable dies are prepared, and these dies or duplicates of them (the master die always being preserved), are employed to press the commercial records, which are the black discs which are commonly employed by the public in reproducing sound on the ordinary talking machine. The amplitude of the sound waves just recorded being very small, it is not possible for them to produce a sufficient activity in a sound-box of sufficient size to directly give the volume of sound which is desired. In the first instruments which were [207] commercially put upon the market and known as the phonograph, the sound was conveyed to the ear from the sound box by ear

(Deposition of Rudolph M. Hunter.)

tubes, so that the delicate reproductions made from wax records were directly transmitted into the ear without permitting extraneous sounds to modify them. As the commercial introduction of the talking machine became more general and popular, the machines were made to transmit the sound to the hearers through the intervening space of the atmosphere by the employment of amplifiers or horns through which the sound waves from the sound box were transmitted, the said horns acting in the same manner as speaking trumpets in amplifying the sounds delivered at the small end. The operation of horns in this reproduction and amplification is an exceedingly complicated matter; it is so complicated that no scientist has yet been able to evolve any definite rule for calculation. It is not possible to provide any formula that may be followed, and the reason for this, I will explain a little more fully after I have further discussed the question of recording.

Returning to the question of recording, we have two radical defects introduced at the beginning of the operation. One of these is the resistance which is offered to the graver in chipping out the grooves in the wax surface, this operation naturally consuming power which is of considerable magnitude when we keep in mind that the recording must not only be accurate as to the primary notes or tones, but should also be accurate in respect to the overtones of harmonics which are always present in all music and articulation of human beings and which overtones or harmonics are the basis of the different character-



(Deposition of Rudolph M. Hunter.)

istics or color of the sound, sometimes called the "timbre" and which enables the same primary note or tone to be reproduced in a variety of ways, that is to say, so that we know whether the tone is produced from the vocal cords, a piano, violin, or a brass instrument. So far as the primary [208] note is concerned all of the instruments produce the same number of vibrations for that particular tone and there is no difference in the vibration of the air, because of that primary tone, except as we impress upon it the overtones or harmonics which are the result of the said primary tone and which follow instantly upon it in the case of the voice. These harmonics are caused by the action of the primary tone produced by the larynx in its passage through the cavities of the mouth and fauces; in other words, if there is a sonorous body of air adjacent to where a primary tone is produced, that sonorous body will be put into a condition of vibration by the vibrations of the primary tone, and if there is more than one such sonorous body present they will all be put in vibration by the primary tone so that they will in turn produce tones of their own which are higher in pitch than the primary tones; and these higher and fainter tones are what is termed overtones or harmonics and it is these tones which give the peculiar characteristic to the different sounds and make them pleasing to the ear. It is to be kept in mind, however, that there are only certain of these overtones which may be produced to advantage, and if there are too many of them, and especially those of the higher pitches, the overtones

(Deposition of Rudolph M. Hunter.)

produce a roughness and harshness to the sounds reproduced and make the same very objectionable. The reason of this is, that an overproduction of the higher harmonics produce what is termed beats. If beats take place they produce a condition of dissonance and this is in effect discord. In recording, the greatest difficulty is in transmitting upon the wax surface the desirable overtones, together with the primary tones, and not introduce any of the objectionable overtones which will produce nasal effects, and such nullifying of the true sounds which were sung so as to make the reproduction bad in spots. It is difficult to make the reproductions by the stylus from the sound waves of the voice true without the use of a tapering tube through which the speech or singing is performed, on account of the [209] lack of power of the voice which is not thus concentrated through the horn, and it becomes practically necessary to gather in a large number of waves of sound and concentrate them upon a small surface on the diaphragm of the recorder. In doing this, the heavier tones of the voice, or of whatever is being recorded, set the conical tube into a state of vibration. This state is not only caused by the primary tones, but also by the overtones, and it therefore follows that the tube necessarily produced in turn additional overtones peculiar to itself, and these overtones necessarily are of the higher order because many of them are produced from overtones or harmonics which are already higher than the primary tones. This production of objectionable overtones is recorded in the

(Deposition of Rudolph M. Hunter.)

wax surface, so that the actual recording is far from perfect. In the case of some records, the articulation is very much more satisfactory than in other records, and this is due to the fact that in the particular matters being recorded the production of the objectionable overtones by the instrument has to a certain extent been prevented; for example, in talking records and in the case of soft music or gentle singing, the extra overtones are very faintly produced by the recording instrument and consequently in these character of pieces the reproduction is more pure and accurate than in those cases where loud pronounced and sonorous reproductions are being had. In the case of loud singing or music from bands and similar boisterous music it is manifest that the thin metal horn through which the music is transmitted to the recorder diaphragm is put into a state of vibration sufficient to produce the objectionable high overtones and these are, of course, recorded in the wax record along with the musical tones and their lower harmonics intended to be recorded; but as before pointed out, they are additions which are highly objectionable in that they are the overtones of the higher order which produce the [210] harsh and dissonant sounds that are so frequently erroneously attributed to the reproducing horn or amplifier. It is also to be kept in mind that the sound record in the wax, is not only a record of the primary tones of one instrument or person, but of numerous instruments or persons, such as when a singer is accompanied, or when a plurality of voices are singing in unison, or a

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band is playing. Under these conditions, there are a variety of sound waves of different amplitude being recorded at one time and in the single groove and it is manifest that as these waves are of different phase as well as of different amplitude, the ultimate groove must be a differential record in which the primary tones are added or subtracted as the case may be, and not only this, but on top of such a varying record, are the further additions or subtractions of the overtone which go further in modifying the actual sinuosity of the record groove. It is evident that these additions and subtractions are likely to occur in such a manner as to greatly distort the original tones impressed upon the record, so that they nullify each other at certain intervals, and therefore, instead of obtaining a true reproduction we obtain something which is not real. That this may be more fully grasped I would say we might imagine a band all playing at once but having its different instruments being recorded upon different records and then subsequently reproducing the music from all of the records operated simultaneously, in which case we will have a perfect reproduction of the music of the band. If, however, we attempt to impress all of these sound records into one groove and so distort that groove that it sometimes has greater amplitude and sometimes lesser amplitude than what the primary tones of the band would have required, it follows that the reproduction of the music from the record so produced, must of necessity have large omissions of real, necessary and desirable vibrations as well as have

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numerous harmonics and overtones injected into the reproduction which are out of place [211] or so displaced that they reproduce dissonance or lack of harmony. Whatever is impressed upon the sound record in this manner must necessarily be reproduced by the reproducer of the reproducing instrument, and while the reproducer is normally a reasonably accurate instrument to reproduce and magnify in volume what is given to it to perform, nevertheless it further impresses upon the sounds being reproduced other characteristics which in some degree adds slight change to the timbre or color of the reproduction.

Adjourned until 10:30 A. M., Tuesday morning.

Philadelphia, June 30, 1914.

Met pursuant to adjournment.

Present: Same as before.

WITNESS.—(Continuing.) As I before stated, the operation of the diaphragm of the recorder is accomplished by sound waves delivered to the diaphragm through an inverted cone of metal. As the small end of the cone is closed by the diaphragm of the recording instrument, we have in effect a closed tube into which sound vibrations are delivered by the voice of the artist or from some other source. As the length of this horn is fixed and as its dimensions are fixed, generally, it is evident that the said horn can only produce certain fundamental vibrations and these will be produced as resonance with every corresponding tone which is imparted into the cone by the singer. As this tube is closed at one end, it produces the uneven harmonics and these are the



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harmonics which produce discord or dissonance; furthermore, the closed horn produced "hollow" sounds and the sonorous body of air which it contains, acting as a resonator, always produces these hollow sounds whenever the particular note which is in sympathy with this sonorous body is sounded by the singer or the instrument which is being recorded. This action of the horn produces a series of objectionable secondary sounds and the vibrations [212] thereof are impressed upon the true vibrations of the music or singing which is delivered into the large end of the cone and all of these, as combination tones, are recorded in the single groove upon the record. As the range of the voice is comparatively limited, most of the tones being within the range of one octave, it is manifest that this sonorous body or closed tube formed by the inverted cone, produces upon the actual music desired to be recorded, a large number of overtones as well as primary tones produced by the tube or horn itself, and while these may not of themselves be objectionable separate tones, they produce variable qualities to the recorded sound which are unnatural at places along the record; and these, of course, are reproduced when the record is employed on the reproducing instrument. The "hollow" sounds as well as the discords which are thus impressed upon the record, are all faithfully reproduced by the amplifier or reproducing horn and the reproducer or sound-box connected at its small end, and it is to the recording that the objectionable sounds coming from the reproducer horn are to be

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attributed. It will also be understood that if the sonorous body of air in the horn of the recorder is attuned to a given note, say for example, middle C in the scale, said body of air will be instantly put into vibration with great force every time that this middle C tone is sung or played; so that the recording is not under uniform pressure conditions, but is constantly varying, and as these pressure conditions are the immediate causes of the moving of the graver or stylus which is doing the recording, it is manifest that the graver will be moved to a greater extent whenever these additional resonant impressions are forced upon the natural sound waves of the voice or music. This causes the record to reproduced distortions in the sound desired, approximating in their nature beats; and while they may not be uniform as to intervals, nevertheless they will be impressed upon [213] the music and, to the extent of their reproduction will be discordant to the real music desired to be reproduced. Furthermore, all discords are due to the presence of "beats" in the reproduction and when these beats approximate 30 to the second we have the worst discords; beats between 10 to the second and 70 to the second produce dissonance which is highly objectionable and which, while being worse at 30 to the second, becomes more allowable as we approached the other two extremes. As all beats are produced by the impression of the undesirable uneven harmonics or overtones upon the primary tone, and as the uneven harmonics are pro-

(Deposition of Rudolph M. Hunter.)

duced by the closed tubes, we see that in employing a closed inverted cone as the means of transmitting the sounds to the recording diaphragm, we are introducing the very conditions which are apt to impress the music with the beats and the resultant discords and also the "hollow" sounds which are so frequently noticed in reproduction. These are, therefore, primarily due to the recording and not to the reproducing.

Considering now the real function of the amplifying horn and the possibility of it impressing objectionable sounds upon the reproduced music I might call attention to the following facts:—If there was no amplifying horn present, the reproducer would have its diaphragm vibrated in exact accordance with the sinuosities of the record groove of the sound record and these vibrations would set the air in the sound-box into corresponding vibrations and these, acting through the small tubular neck or outlet of the sound-box would produce vibrations of the surrounding air just the same as the sounds emitted from the mouth will put the surrounding air into vibration. However, the force exerted in accomplishing this being relatively weak, there is not power sufficient to put the body of unconfined air into sufficient vibration to transmit the sound to a considerable distance, and it is therefor the custom in the later machines in the talking-machine art to employ amplifiers [214] in the form of horns. As I before stated, the old phonograph type, largely employed ear tubes, which consisted of two rubber

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rubes branching from the sound box and inserted into the ears so as to shut out all extraneous sounds. When the amplifying horns were employed, the result so well known in speaking trumpets came into operation but with the difference that instead of the voice being directly delivered into the small end of the horn, the sound vibrations were produced by the mechanical sound-box under the control of the sound record. This sound-box accurately reproduced all of the sound waves which were recorded during the process of recording and such sound waves were reproduced, whether objectionable or not. The speaking tube acting as an amplifier, magnified these sounds and modified them only slightly. In strengthening the sounds the amplifier operated on the principle of multiplying the fronts of the sound waves at points where they impinge upon the metal of the horn and by the reflections, set up additional sound waves and their corresponding fronts when they in turn impinge upon other surfaces of the horn; and this is continued until, by the employment of the curve of the bell, these sound waves are directed outwardly into the surrounding space, multiplied in quantity so as to have capacity for traversing the intervening space between the horn and the distant hearer. As these waves travel, it is manifest that they have a higher rate of vibration in their action upon the ear than the actual rate of vibration under which they were produced, and while this would have a slight tendency to put the tones out of "pitch" this is not objectionable since all of the tones would be

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increased in the same degree as to pitch and it would only correspond to what would be similar to a piano being tuned to concert pitch or somewhat below it. While the magnification of the number of sound waves is being produced by the amplifying horn there are two things taking place in the horn which must be kept in mind and [215] these are, the vibration of the material of which the horn is composed and the vibration of the sonorous body of air which fills the horn and which is set into a state of vibration by the action of the diaphragm and sound-box. The sonorous body of air in the horn, as in the case of the recording process, will act as a resonator more to certain tones than to others. The internal shape of the horn is so irregular that it provides numerous conditions of the air which are responsive to different tones and it is due to this that some horns in their action may be more pleasing to some persons than to others. The shape of the horn will have a tendency to control the distribution of the air into the atmosphere and by being suitably shaped it *we* may cause the sound waves to reach to a greater distance or to a lesser distance according to what use the instrument is to be put. If the horn flares more, such as in ordinary musical instruments, the French horn for example, the sound will be more fully distributed into the atmosphere than if the horn is longer in relation to its diameter at the large end. Various shapes of horns are used in musical instruments and in reproducing instruments and it has always been a matter of fancy as to just what the general shape of



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the horn may be. They all amplify and they all operate in amplifying under the same general principle, namely, of setting into operation vibrations in the sonorous body of air contained within them, and in doing so multiplying the wave fronts which pass out into the atmosphere.

Considering now the material of which the horn is composed, the amplification with respect to the primary tone is the same for all materials. Primary tones are wholly independent of the character of the material of which the horn is made. These tones are the same whether the horn is of metal, wood or any other material. The only effect which can be put upon the amplified tones which come from the horn is the possibility of additional quality due to the [216] harmonics. As the material of the horn is put into vibration by the sounds produced by the sound-box, these vibrations will produce additional harmonics which may or may not be desirable, but in any event, they are only supplemental to the already formed sounds which are being reproduced and which were characteristic of the recorded sounds, as I have before explained. In the case of the reproducing horn, it is an open tube instead of being a closed tube as in the case of the recorder, because in this case the end in which the sound waves are injected is the small end next to the reproducer or sound-box. We, therefore, have in this reproducing horn the qualities of an open tube and not a closed tube. The open tube produces harmonious overtones, and not only the discordant ones as in a closed tube, so that

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the natural tendency of the amplifying horn is to improve the reproduction and this is independent of the materials of which the horn is composed. It is also to be kept in mind that the horn is seldom over two feet in length and as the sound waves of a woman's voice are from two to four feet, it is manifest that no special pronounced primary tone could be produced by the vibrations in the small end of the amplifier. Whatever vibrations are produced by the action of the horn material itself being set into vibration would be overtones of the sounds being reproduced by the reproducer or sound-box and these would be characteristic of the recorded sounds and not inherent to the material of which the amplifying horn is composed. If the horn is made of metal, it is capable of being put into vibration of greater rapidity than if it were made of wood, and because of its greater rapidity of vibration, it might produce higher harmonics than a corresponding wooden horn would produced. But the production of these harmonics are directly based upon the character of the music or sounds which are delivered to the horn by the sound-box. Furthermore, the amplifying horn does not produce [217] any excessively high harmonics under ordinary musical conditions such as singing or from stringed instruments, such as the violin. In cases where heavy music has been recorded, such as from brass bands, there are more powerful vibrations delivered from the sound-box into the horn and these, if the horn is of thin metal, will produce a greater vibration in the walls of the

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horn than in the other cases referred to. This would tend to produce the harmonics due to these additional loud sounds and as they would be in keeping with the causes, they would not appear as discords or dissonance to the hearer. There is, therefore, in my opinion, no object whatever in providing means for preventing the vibration of the horn walls. If they are prevented to a reasonable degree, the horn would still act as an amplifier to magnify the reproduction to the desired degree and if we stopped all of the vibration of the horn, we would greatly reduce the wave fronts and therefore would impair the magnification of the sound, which it is the function of the horn to increase. Any means which would prevent the vibration of the walls of the horn would be highly objectionable and while too much vibration is not desirable, the natural shapes of the horns when made of an integral structure, gives the strength and rigidity which is suitable. In my opinion, the trouble with the reproduction, which is so frequently attributed to the amplifying horn, should be sought further back, namely, in the recording end of the system instead of the reproducing end.

Q. 20. From your knowledge of the talking machine art and your experience in connection with the working of the said machine and the uses to which the amplifying horns are placed, will you please state whether the ribs present in the sectional horn of the Nielsen patent in suit, constitute anything in connection with the said horn as will serve to influence or maintain the purity or integrity of the recorded

(Deposition of Rudolph M. Hunter.)

sounds reproduced by the use of such a [218] constructed horn?

Mr. HILLIARD.—I object unless this witness first states exactly his conception of the nature of the ribs of the Nielsen horn; that is, their size, degree of rigidity and method of construction.

Mr. ACKER.—In view of the above objection, the question for the time being is withdrawn.

Q. 21. Mr. Hunter, with the Nielsen Patent before you, you will please carefully examine the same and state whether you find disclosed therein any statement relative to the “size, degree of rigidity and method of construction” so far as relates to the ribs referred to in the said letters patent?

A. I do not find any statement as to the thickness of metal, nor to the exact proportions of the flanges which are at the edges of the strips and which are to be united to form the ribs. Fig. 3, which shows the horn in cross-section is the only view which would give any conception of the possibility of the relation of thickness to the other dimensions, but as it is manifest that the drawing is only by way of illustration and not to be taken as a restriction as to the thickness, it is my opinion that there is nothing in the patent which specifically defines what the dimensions of the ribs shall be. The claims of the patent, after defining the general features of construction forming the invention, terminate with the words “substantially as shown and described.” I have assumed that the word “shown” was to be taken as meaning the outward flanged edges of the plates which are

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abutted and secured together by solder or otherwise to form radial ribs from the outer surface of the horn, rather than the particular thickness of which the horn is to be composed.

Q. 22. With the patent before you, I would ask you to examine the same and state in what manner you are instructed from the specification [219] thereof or even from the drawings thereof, as to how or in what manner the flanged edges of the strips composing the horn are to be united or connected together?

A. There is nothing in the patent itself which explains how these radial flanges are to be secured together. In Fig. 3 they are shown as abutting so that two flanges form a radial rib and I see no way of connecting them unless it is assumed that they are soldered together, but the patent is silent as to how to connect them?

Q. 23. In view of your answer to questions 21 and 22, I will ask that question 20 be read to you and an answer be made thereto.

(Question 20 read.)

A. They do not.

Q. 24. From your knowledge of the talking-machine art and experience in connection with the use of amplifying horns employed therewith for the amplification of sound, please state in the operation of such machine, to what you attribute the purity or the maintenance of purity so far as relates to the reproduction of the recorded sound?

A. I consider that the purity of the sound repro-



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duced is dependent upon insuring the purity of the sounds recorded. If the sounds recorded are accurate records of the sound which it is desired to be reproduced, the purity of the sounds from the amplifying horn will be assured. Moreover, it is desirable that the amplifying horn shall be symmetrical. The horn is also best made of material which will give sufficient solidity so as not to be subjected to undesirable vibrations such as might occur in very thin sheet metal, but this has reference to the surface portion of the horn rather than to the general seams and necessary mechanical constructions which are resorted to to build up the horn in the most economical manner. In other words, if the desired general [220] shape of the horn could be formed from one single piece of metal, approximating for example the construction which is resorted to in horn "E" which I have before produced, we would have the best form of a horn if it is to be made of metal. By this, I do not mean to require that the shape shall be the shape shown in this particular horn "E," but that whatever construction as to shape is employed, the horn would best be made of one piece of material; that is, without any so-called strengthening ribs or other additions which might be applied to it for convenience in manufacture or for supposed advantages.

Q. 25. From your knowledge of the talking machine art and your experience in the use of amplifying horns for the reproduction of recorded sounds from talking machines, please state what contribution or addition to the prior art in connection with

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amplifying horns for talking machines was produced by Nielsen so far as relates to disposing of metallic vibrations produced by the action of the sound waves on the walls of the horn and maintaining or preserving the purity or integrity of the recorded sound in the reproduction thereof through the use of the sectional ribs of the amplifying horn of the patent in suit. In answering this question, you will do so with your knowledge and experience in connection with the use of the amplifying horns utilized in connection with talking machines prior to the date of the patent in suit?

Mr. HILLIARD.—I object to the question on the ground that the defendant is estopped from denying the utility of the invention of the patent in suit by reason of having used it.

A. In my opinion nothing which is set out in the Nielsen Patent in suit contributed or added to the prior art in respect to disposing of metallic vibrations produced by action of sound waves on walls of the horn, or for maintaining or preserving the purity or integrity of the recorded sound in the reproduction thereof, as it existed at the date of the Nielsen invention. [221]

Q. 26. From your knowledge and identity as an expert with the talking-machine art, can you state approximately the number of amplifying horns which have been placed on the market by the various manufacturers of talking machines since the year 1895 up to the present time and in giving your answer, you

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will do so irrespective as to the kind or shape of amplifying horns?

Mr. HILLIARD.—I object unless the question be confined to horns of which the witness has had actual knowledge. The facts sought to be proved also not being of a nature which permits of expert evidence or evidence based upon general experience.

A. In view of my intimate connection with the talking machine art I have every reason to approximate the number of horns sold and in use in talking machines since 1895 to be upwards of 4,000,000. By way of explanation of this approximation, I might say that I have had occasion to prepare contracts and to institute legal proceedings in which the number of these instruments were in question and by this I could approximate the aggregate number, I should say that four millions was well within the number of horns which have gone into use in the talking machine art.

Defendant now offers in evidence a printed copy of U. S. Letters Patent No. 722,398, granted E. Bock, under date of March 10, 1903, for a Method of Manufacturing Conical Tubes, and asks that the same be marked "Defendant's Exhibit Bock Patent."

Mr. HILLIARD.—Objected to as immaterial.

Defendant also offers in evidence a printed copy of U. S. Trademark Certificate No. 31,772, granted John Kaiser under registered date July 5, 1898, for a trademark for horn used in connection with sound producing devices and asks that the same be marked "Defendant's Exhibit Kaiser Trademark."

Mr. HILLIARD.—Objected to as immaterial.

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Q. 27. Mr. Hunter, with the list of patent exhibits before you, [222] I would ask that you examine the same and state such similarities and differences which you find to exist between the devices disclosed thereby and the horn of the patent in suit?

A. The general shape of the horn of the Nielsen patent in suit is, as I have before stated, the usual shape which is given to the horns of musical instruments; and aside from the extensive use of this shape in brass instruments, it is also shown in a general way in several of the patents before me. Among these is the Villy Patent of 1903, which shows the horn, not only of the same general shape but as formed of strips tapering from one end to the other and connected at their side edges so as to constitute in the assembled form the amplifying horn which is more particularly illustrated in Figs. 1 and 5. The general shape of this horn is also shown in the Villy horn which I have heretofore produced and marked horn "F." This horn differs from the construction of the Nielsen horn only in the minor details of its construction, namely, in having the ribs along the edges of the tapered strips formed as hinges and arranged alternately on the inside and outside of the horn instead of all being arranged upon the outer side and formed by abutting flanges. Furthermore, in the Villy horn, it is capable of being collapsed for convenience in transportation.

The general shape of the horn, namely the curvature from the small end to the larger or bell-mouth end longitudinally considered, is also shown in the

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Kaiser trademark registration of 1898. As there is nothing in the general shape of the Nielsen form except as to the ribs all being upon the outside, and if we consider this as a feature of design or outward configuration, I find that substantially this same design is illustrated in the design patent of Shirley of 1875. This Shirley Patent does not define the use of the article, but if the shape shown is employed as a horn, it would answer the purpose of a reproducing horn on a [223] talking machine with the same general results as contended for in the Nielsen horn.

In respect to the construction of horn having the longitudinal strips tapering from one end to the other and forming the sides of the horn, I would point out that this structure of horn, aside from being shown in the Villy Patent, is also shown in the Cairns Design Patent of 1877 for a speaking trumpet. A speaking trumpet is an amplifying horn and therefore is directly relevant to the structure of the Nielsen Patent. While a portion of the body tapers with regularity, the taper increases at the end to form the bell. Moreover, the cross-section of the horn in the body, as indicated in the diagram Fig. 3, is polygonal, having straight portions connected by angular juncture precisely as is the cross-section of the Nielsen horn; any difference in the polygonal form being only due to the number of sides and there is no restriction in the Nielsen horn as to this number.

As I have before pointed out the rigidity against vibration of the horn walls is greater where the meeting angle is of one continuous metal than where they



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are flanged and connected as in the Nielsen Patent; it is evident that the speaking trumpet of this Cairns Patent is more correctly designed to prevent extraneous vibrations than is the Nielsen structure. At the extreme bell portion the cross-section is such, as indicated in Fig. 2, that these angular junctures of the side plates provide outwardly directed ribs, said ribs being in a longitudinal direction and acting in a very pronounced way to prevent the vibration of the horn at the juncture of the side surfaces.

Adjourned until 2 P. M. [224]

Met after recess.

WITNESS.—(Continuing.) Another collapsible horn structure shown in the prior patent is that of the patent to Porter of 1900. If we examine Fig. 1 of that patent, it is seen that on diametrically opposite sides there is a double thickness of the material of which the horn is composed, said double thickness being formed of overlapping edges of two longitudinal strips, which strips are tapered from one end to the other. The overlapping portions while not making rigid seams, indicate a reinforcement longitudinally of the horn. In this construction, one of the seams is formed by a flexible strip *c* united to the outer surfaces of two overlapping members *a*, *b* of the strips as shown in Fig. 2 and which strips are ultimately bent into the tubular form illustrated in Fig. 1, and the edges united by the fastening devices *d*, of which there are number arranged along the length of the horn. The patent states that the horn may be made of pressed-board, celluloid, or

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other material capable of ready bending. In my opinion sheet metal could be employed as the basis of the strips.

In respect to the provisions of the polygonal cross-section of the horn with ribbed portions at the angles, said ribbed portions extending outwardly, I would refer to the Design Patent to McVeety and Ford of 1901 and which is essentially for a ship's ventilator. In this horn the end C is of smaller cross-section than the open end D and the horn is made up of longitudinal strips A which are tapering and the side edges of these tapered portions or strips are bent outwardly into engaging seams B, forming ribs, as is very clearly indicated in the several figures. The fact that this horn is given a lateral or axial curve in the direction of its length is not a matter of any importance, as the curvature in this direction is not at all detrimental to the use of such horn for purposes of reproduction of sound. In respect to the use of the ventilator, such action [225] of the air as would be contained within it would be either a circulation from the small end C to the large end D or the conveyance of sound vibration coming up from below and passing through the horn from the small end to the large end precisely as would take place in use of an amplifying horn of a talking machine. It is true that a ventilator of this character is not intended for sound reproduction, but it is nevertheless well known that sounds are distinctly transmitted through it, and often the said ventilators are employed as speaking tubes. Not only is the illustra-

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tion a disclosure of the essential characteristics of the Nielsen construction in that it shows the tapered strips flanged at their side edges and said flanges united to form ribs extending longitudinally of the horn, but the description itself is clear upon this point; for instance, I find described in that patent the following language:

“The general contour of the ventilator is that of a curved tapering figure in the form of a cornucopia, being octagonal in cross-section and having convex ribs at the base and mouth, and similar ribs at the intersection of the plate, forming the walls of the ventilator.”

In my opinion the mechanical construction of the Nielsen horn is substantially shown and described in this McVetty & Ford Patent. I have not considered the particular use of these devices have a material bearing on the question of identity of structure, because the use of amplifying horn and of ventilators were both well known long prior to the date of the Nielsen Patent.

Another example of the construction of a tapering horn which I find in the prior art is that illustrated in the Bock Patent of 1903. In Fig. 3 is shown the tapered construction and in which the tapered tube or horn is formed of two longitudinal strips of tapered shape and having lateral flanges along the edges, said flanges abutting to form radially outwardly directed ribs at a plurality of places about the horn. The patent is stated to be for a method of manufacturing conical tubes; amplifying horns are

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in a general [226] way conical tubes. The patentee further states in respect to the strength of the construction "the conical tube being formed with longitudinal ribs, which impart greater rigidity to the finished tube and permit of its being more readily riveted," which language clearly points out that the tube is provided with longitudinal ribs and the drawing shows that these ribs are radial and extending from the outer surface. In respect to Fig. 3, the patentee says, that it shows "a tube with longitudinal ribs." From the general description, there is no indication as to limitation with respect to the thickness of the metal or to the manner of connecting the flanges into radial ribs, for in several of the figures different manners of connecting the ribs are shown. In Fig. 9 for example the edges of one strip are flanged over the other. In my opinion this patent discloses the feature of a tapered horn having outwardly directed longitudinal ribs and which is capable for use in a talking machine. The degree of the taper is of no consequence and may be anything which the mechanic may desire by properly proportioning the extent of taper given to the sheets from which the tube is formed. The only difference between this construction and that of the Nielsen Patent, other than the number of strips employed, is that the shape of the tapered strips are somewhat different to enable the tube to have the flare which is common and which Nielsen in his claim states was the usual form. This difference, therefore, in my

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opinion, is an immaterial difference, as is also the number of strips employed.

In the Osten & Spalding Patent of 1902 I find disclosed an amplifying horn formed of a combination of wood and metal. In this horn the main body portion is divided longitudinally by the internal ribs E' E'', Fig. 6, and thereby providing a plurality of passages of tapered interiors which unite at each end, that [227] is to say at the small end connected to the sound-box and at the large or bell end of the horn. Moreover, the shape of the amplifier is polygonal and provides angular corners formed between the adjacent or meeting side strips. By this construction it is evident that the horn is reinforced or strengthened by ribs, although these ribs are placed upon the interior of the sides instead of the outer portion of the horn, as in the Nielsen construction. However, this horn of the Osten & Spalding Patent discloses the utility of the polygonal shape with the rigidity of bracing sections which constitute the ribbed effect to the horn as a whole; and while the patentees endeavored to accomplish results in addition to those which might be claimed for the Nielsen structure, they show the broad principle of bracing the side walls of the horn, so that there was nothing left in the Nielsen Patent beyond mere adaptation to his particular polygonal cross-section of the identical radial ribs of the Bock Patent or the substantial equivalent of the ribs of the McVeety & Ford Patent. The side strips of the Osten & Spalding Patent are also tapered from one end to



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the other; and while the bell is formed by additional strips, the angle of the taper is increased so that the taper of the whole tube may be said to be gradual in that the rate of taper at the beginning and ending is different, which is also characteristic of the Villy structure and the McVeety & Ford Patent to which I have before referred.

In addition to the patents which I have referred to, I will simply call attention to the fact that the Fallows Patent of 1876 shows a horn in which the walls are provided with a large number of ribs which are spirally arranged in the direction of the length of the horn. These ribs greatly strengthen the horn structure. [228]

Patent to Gersdorff of 1891 shows a tapered horn or funnel which in Figs. 3 and 4 are of one length and have a gradual curve over a large portion of the length. This tapered horn or funnel is formed of three longitudinal strips gradually varying in width and having their lateral edges flanged so as to inter-engage and form three longitudinal seams arranged equi-distant about the horn or funnel. The seams in this construction is very similar to the seams employed in the defendant's horn; that is to say, they are flat seams and of several thicknesses of the sheet metal of which the funnel is composed. This patent shows the general principle of construction of the series of longitudinal strips of gradual taper and in which the several strips have their side edges flanged and united and differs only from the structure of the Nielsen Patent in that the latter distinctly described

(Deposition of Rudolph M. Hunter.)

the flanges as outwardly projecting and the abutting flanges to provide outwardly directed ribs. This patent to Gersdorff does not show outwardly projecting ribs but shows flat seams extending lengthwise of the horn or funnel.

The Clayton Patent of 1898 shows a tapered amplifying horn with a very pronounced flare. In the construction shown in this patent the device is intended to be used as an audiphone for collecting and transmitting sound vibrations to the ear. Considering, however, the construction of the flared horn element A, I find that it is shown as having a large number of radial ribs and the said ribs being so spaced that there is a diverging or widening between them from the center, or more correctly speaking, from the small end of the horn to the outer or bell-mouthed end. At the small end of the horn there is provided a diaphragm F which corresponds to the diaphragm of talking-machine sound-box in respect to its location. While there are no seams shown in this horn and while the whole horn is indicated as stamped from a [229] single piece of sheet metal, nevertheless, it is reinforced longitudinally by ribbed portions and the surfaces between the ribs is tapering from the small end of the horn to the outer edge thereof. The general principle of reinforcing or strengthening the longitudinal construction of the horn is shown in this patent and hence the invention or difference of the Nielsen structure over this prior art taken by itself is in the particular manner of providing the strengthening ribs and adapting them

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to the old and well known shape of horn shown in the prior art prior to the date of the Nielsen invention.

The patent to Marten of 1903 illustrates a form of horn similar to what I have heretofore designated as the B. & G. type and which is exemplified in the horn which I have designated as horn "A." Another horn of this same general character is shown in Fig. 1 of the patent to Runge of 1902.

Q. 28. What distinction, if any, do you make between an amplifying horn, a megaphone and an acoustic horn, so far as relates to the amplification of sound?

A. None whatever. The various structures mentioned in your question are all for amplifying; and while a megaphone might be used without any particular care as to nicety of reproduction since the question of carrying sound to a distance is the main thing desired, and while an amplifying horn especially intended for reproduction of music and articulate sound for entertainment might involve some of the finer distinctions in respect to purity of the overtones of the record, nevertheless the general principle of construction and operation are the same and they are interchangeable as to their uses if so desired.

Q. 29. You have testified concerning the Villy Patent in evidence; I would ask you to please to refer to the Villy Patent and state how do the strips composing the sectional horn, shown and described, compare as to curvature and taper to the strips or

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sections [230] composing the horn of the patent in suit?

A. I have made the comparison called for in the question and I find that the shape of the strips are in all material respects identical so far as the surface area are concerned in their relation to the production of the continuous curve of the horn whereby it approximates the usual curve of brass band instruments. In the Villy Patent there are a large number of these strips, tapered from one end to the other and which strips are connected together along their curved edges side by side in such a manner that when the horn is set up into its operative condition there is a rigid horn produced of the same general character as is illustrated in the Nielsen Patent in suit. In the patent of Villy, it is stated that the strips are formed "of paper, wood, linen or other preferably flexible material" and from this I understand that any suitable flexible material may be employed in the building up of the horn. I am confirmed in this opinion by reference to the paragraph preceding the claims in which the patentee says:

"I do not limit the application of my invention to any particular method of building up the segments or to any special curve or configuration of the same, and I vary the method of jointing and stiffening them to suit the material from which the strips are constructed and the foundation or base fabric upon which the flexible material forming the strips is secured."

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As shown in the Villy horn, which is marked "Horn F," we have an example of the use of thin sheet metal as the material of which the tapered strips may be formed as equivalent of the strips of wood or other material referred to in the patent. With respect to the rigidity of the horn in its set-up condition ready for use, the patentee states:

"The angles formed by the meeting of the hinged segments when extend form, as it were, ribs, giving rigidity to the trumpet form."

Page 1, lines 64-66.

I consider this a clear statement showing the purpose [231] of obtaining rigidity as well as special curvature, such as is disclosed in the Nielsen Patent in suit. Further on in this specification, the patentee also says:

"My horn, owing to the curvature of the edges of the strips, is self-sustaining and requires no additional stiffening or sustaining devices.

\* \* \* " Page 2, lines 51-54.

The general tapered shape of the strips is clearly illustrated in Fig. 3 and is manifest from the examination of Figs. 1 and 5. In the particular connection between adjacent plates illustrated in Fig. 6 there are two metal strips K which are bent over into hook shape so that they interengage approximately forming a hinge C and as shown in this figure part C would constitute a rib as it extends considerably from the surface of the sheets or strips.

Q. 30. Mr. Hunter, please examine Defendant's Horn Exhibit "F" and compare the same with the



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drawings and descriptive matter of the disclosure in the Villy Patent as to which you have just testified and state whether or not the said horn exhibit "F" conforms to the said Villy Patent?

A. The general construction of the Villy invention of his patent of 1903 is embodied in the Villy horn exhibit "F." There are some specific differences, however, in the manner of constructing the exhibit "F" over what is shown in the patent. These differences are more particularly in the following respects: In the Villy Patent the hinge between the several tapered strips is formed by a flexible fabric, whereas, in the particular horn exhibit "F," the hinge is formed by flanging the edges of the plates or strips and connecting them by wires to provide what we would call a piano-hinge construction. Furthermore, in the patent the several strips are first hinged together to form a sheet which may be folded in a zig-zag direction and when stretched out may be connected at its two free longitudinal [232] edges by suitable clips or interengaging parts to make the horn take the shape shown in Figs. 1 and 5 of the Villy Patent. In the horn "F" there is no line of detachment, except by withdrawing one of the wires, but as I understand the intention in the use of this horn, it is so arranged that the horn may be collapsed without disconnecting any of the hinged strips. If one of the hinge wires is withdrawn, then the strips will form a connected sheet similar to what is illustrated in Fig. 2 of the Villy Patent, that is, its arrangement before being set up. This is a minor

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difference which is incidental to the collapsible feature and is not at all material to the final shape or rigidity of the horn. The other difference I note, is that the horn "F" has an additional conical part for the small end which extends over the narrower ends of the strips to produce a clamping action as it were, between the inner and outer cone. This would be answered by what appears to be a second cone in Fig. 1 of the Villy Patent, and what appears to be the band q of Fig. 5 of the Villy Patent, though these bands are cones of shorter length than the outer cone of the horn "F," but in position and principle I would consider them the same. In the Villy Patent, this part q is not specifically described except in the language "by means of elastic or other connections q, arranged upon the horn end \* \* \* " and which I understand to be a flexible band such as a tube of metal which will clamp itself upon or over the smaller end of the horn to hold it down upon the inner cone. The general construction, therefore, of this part q of the patent corresponds substantially to the outer conical tube of the horn "F," though differing in minor details.

Q. 31. Mr. Hunter, I hand you a printed copy of United States Reissued Letters Patent No. 12,442, reissued to G. H. Villy under date of January 30, 1906, for an Improved Horn, Phonographs, Ear [233] Trumpets, etc., and ask you to examine the said reissue letters patent and state whether the differences embodied in your last answer and equally so the similarities between the Villy Patent No. 739,954 and

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Defendant's Horn Exhibit "F" appear in the said reissue letters patent?

Mr. HILLIARD.—Objected to as immaterial.

A. I have examined the reissue letters patent referred to and am of the opinion that it is intended to illustrate identically the same construction which is found in the Villy Patent of 1903, and therefore it is, therefore my opinion that the differences set out in my last answer and equally so the similarities, between the Villy Patent 739,954 of 1903 and the Defendant's Horn Exhibit "F" equally appear in the said reissue letters patent No. 12,442 of 1906.

Q. 32. Please state whether in your opinion the horn exhibit "F" is any nearer an approach to the horn construction of the Villy Patent 739,954 than it is to the horn construction of the Villy reissue patent 12,442 of January 30, 1906?

Mr. HILLIARD.—Objected to as the question is leading.

A. No, it is not. It bears the same relation both to the original and reissue patents referred to.

Q. 33. I will ask you to examine the Nielsen Patent in suit and state whether you find in said patent the differences which you have set forth in your answer to question 30 as existing between the horn exhibit "F" and the Villy Patent 739,954, that is to say do you find embodied in the Nielsen Patent those differences which you have enumerated and set forth in your said answer to the question referred to?

A. No, I do not, because the differences which I

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have referred to between the horn "F" and the Villy Patent are details of construction which are not shown or disclosed in any manner in [234] the Nielsen Patent. In view of what I have before testified to, however, I desire to say that I have previously referred to the hinges of the Villy horn as forming ribs longitudinally of the horn structure, but I have also stated that those ribs were not the ribs which I find described in the Nielsen Patent.

Q. 34. Do you find in the Villy original patent, any foundation for treating the point of jointure between the sections composing the horn of said patent as ribs, and if so please point out from the specification such foundation?

A. Yes, I do, and in considering the Villy Patent in the previous answer I referred to this feature of rigidity which was had at the corresponding places where the ribs occur in the Nielsen Patent. In the Villy Patent, after describing how the tapered strips *b* were connected together and whereby in arranging the horn in the open position the rigidity was obtained, the patentee states:

"The angles formed by the meeting of the hinged segments when extended form, as it were, ribs, giving rigidity to the trumpet form."

(Page 1, line 64-67.)

and further

"My horn, owing to the curvature of the edges of the strip, is self-sustaining and requires no additional stiffening or sustaining devices \* \* \*." (Page 2, line 51-54.)

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Q. 35. In the horn exhibit "F" contains on the tubular sectional portions by which it is connected to a talking machine, the imprint Searchlight Horn Company, together with the picture of a lighthouse with the rays extended therefrom and the notation U. S. Pat. October 4, 1904, and January 30, 1906. Assuming October 4, 1904, to refer to the Nielsen Patent in suit and January 30, 1906 to refer to the Villy reissue patent to which your attention has been directed, I will ask you, with the two patents before you, to state what feature or features in common does there exist between exhibit Horn "F" and the horn of the Nielsen Patent in suit? [235]

Mr. HILLIARD.—Objected to as immaterial.

A. The Villy horn "F" corresponds to *the x* what is shown in the Nielsen Patent in the general shape of the tapered strips of which the body of the horn is composed. It also corresponds in that the cross-section of the body is polygonal in shape; that is to say, having the strips forming straight connecting portions approximating a circle and in which the straight portions connect at an angle. It also corresponds in the general longitudinal curvature of the horn which is due to the tapered shape of the strips making up the body of the horn. It differs in the details in respect to the particular manner of connecting the several sections or strips.

Q. 36. You have stated in your last answer in what respect Exhibit Horn "F" corresponds to the horn shown in the Nielsen Patent in suit, and I will ask you whether or not the said horn conforms to the



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horn in the Villy original patent in such manner?

A. Yes, it does.

Q. 37. And would your same answer hold true if the Villy reissue patent be substituted in the question for the Villy original patent?

A. Yes, my answer would be the same.

I offer in evidence on behalf of the defendant the Villy Reissue Patent No. 12,442 of January 30, 1906, the same being a reissue of original Villy Patent No. 739,964, and ask that the same be marked "Defendant's Exhibit Villy Reissue Patent."

Mr. HILLIARD.—Objected to as being immaterial.

Q. 38. Please examine the horn of the Villy Patent as disclosed as applied to a talking machine, and state to what extent it conforms in general appearance to the shape and configuration of the horn of the Nielsen Patent in suit? I have reference to the Villy original patent.

Mr. HILLIARD.—Objected to as immaterial.  
[236]

A. The general shape and configuration of the Villy horn of the 1903 patent corresponds very closely to the shape and general appearance of the horn of the Nielsen Patent in suit. A comparison shows that the tapered strips in the Nielsen Patent are somewhat longer in proportion to the diameter of the horn than in the case of the horn of the Villy Patent, but this is immaterial, as the length of the horns vary to suit the fancy or desire of the manufacturer or user. There are no fixed rules as to the

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length of the horn. In both cases there is an unribbed or conical portion  $a^3$  in the Nielsen Patent and 1 in the Villy Patent which corresponds as terminating at the beginning of the strips and in each there is a still smaller tubular section  $a^2$  in the Nielsen Patent, and in the Villy Patent so that in the general structure the horns correspond very closely; to the eye they are both what may be termed morning-glory or flower effect horn.

Q. 39. Please state whether or not in your opinion the fact that the horn exhibit "F" is constructed of metal, differentiates the same from the invention disclosed by the original Villy Patent?

A. No, I do not, because it is a mere selection of material and because amplifying horns have been made and are being made of various materials, more especially of wood or metal as preferred. Some horns are of both wood and metal. The selection of material is merely a matter of opinion as to which is more suitable for the particular character of reproduction. In the cheaper machines metal horns were usually employed. In the [237] more elaborate and costly machines, wooden horns were adopted. At the present time, the wooden horns are largely superseding the use of metal. I do not consider that the selection of material would in any manner change the principle of the invention described in the Villy Patent, the restriction only being that whatever material is employed it shall be capable of being used in carrying out the principles of construction which are set out in the patent. That metal is

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well suited for the purpose is clearly exemplified in the Defendant's Exhibit Horn "F" which I have been heretofore referring to as the Villy horn.

Q. 40. Mr. Hunter, I direct your attention to a publication of 1887 entitled "The Metal Worker Patern Book" and direct your attention more particularly to the descriptive matter beginning on page 221 at section numbered 603 and the illustration contained on page 222, and also the descriptive matter commencing on page 225, section 605, and to the illustrations and descriptive matter on page 226 and concluding on 227 at section 607, and ask you to examine the same and state the form of device you therein find disclosed to you.

Mr. HILLIARD.—Objected to *being* immaterial.

A. I have carefully examined the portion of the publication to which my attention has been directed and as specifically stated in the question, I find disclosed therein various examples of the manner of making tapered horns or cornucopias of various shapes. On page 222 the cornucopia not only is tapering with a very pronounced bell, but the longitudinal axis of the same is of a sinuous character, thereby making it one which is difficult to construct. The plans which are illustrated in the diagram are for the purpose of educating a mechanic how to cut the sheets of metal which, when placed together, will provide a cornucopia of the particular shape which shall be formed of longitudinal strips tapering from one end to the other and [238] forming in cross-section a polygonal structure having eight

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sides. The construction which is there shown and carefully laid out is a cornucopia or tapering horn which has all of the essential characteristics of an amplifying horn suitable for reproduction of sound, and also having the general characteristic of the horn of the Nielsen Patent in suit except that it does not describe the specific outward flanges which are to form the ribs. The construction shown illustrates the tapered strips as being abutted together at the angle desired to form the octagonal cross-section. The particular tapering character of the strips may be readily grasped from an examination of the diagrams which are shown as grouped about the central figure. If we were to use a plurality of strips conforming to the particular diagrams shown at the upper part of Fig. 512, we would obtain the identical general shape of horn shown in the Nielsen Patent. In the tapered horn illustrated in the particular design shown in the publication, the longitudinal tapered strips are purposely laid out with somewhat varying configuration so that when assembled, they will not only produce the tapered form of the general character of the horn in the Nielsen Patent, but will provide a horn with a sinuous axis, this latter merely being a difficult feature of accomplishment and therefore being specially given by way of example. The same evidences which are found in the illustration and description as to how to construct such tapering horn may readily be followed by any one skilled in the art to make a straight

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tapered horn or one of any other general alinement as to its axis.

In respect to the horn illustrated on page 226 under Fig. 516, I find that it illustrates a tapered horn of octagonal cross-section and having a longitudinal axis of curved character. The general construction of this horn is somewhat similar to the horn before referred to as found on page 222, but the bell construction or large end of the horn is different in that in the present case there is [239] no special outward flaring to provide a pronounced bell. The longitudinal strips the side surfaces of the horn are tapered from one end to the other and their general shapes are indicated in Figs. 518 to 520 inclusive, two of them being straight and the remaining ones curved. The particular taper of the horn here illustrated is not as full as illustrated in the Nielsen Patent, but that is merely a matter of design and with the illustration or example given in the publication the extent of taper may be anything which the designer wishes to produce. He may make one end smaller than the other to any degree and he may make the bell mouth end flare to a greater degree without having to provide anything but what is fully explained in this publication. The particular provision for an extended bell mouth is also shown in the layout under Fig. 512 and the principles there shown may be readily applied by any one skilled in the art in extending the particular shape which is shown by way of example in Fig. 516 of the same publication.



(Deposition of Rudolph M. Hunter.)

Q. 41. Mr. Hunter, in view of the illustration of the curved tapering horn octagonal in section illustrated on page 226 of the publication to which your attention has been directed, together with the descriptive matter directing one how to lay out the patterns for the horn, what problem of a mechanical standpoint would be presented to a mechanic in uniting the laid-out sections in the building up of the completed curved tapering horn?

A. There would be no special problem, as he would adopt the manner of uniting the sections which he found most convenient, or which was most easy of accomplishment by the tools at his command. There are various manners of forming joints between sections of sheet metal and these are either by inter-engaging seams, flanging the metal and soldering the flanges, or arranging along the line of the seams, strips of metal to which the specially cut strips are soldered, thereby not only joining the strips but also reinforcing [240] the joints. There would be no problem except what any ordinary tin worker or sheet worker would be capable of instantly solving by his knowledge, which would be ordinary mechanical skill.

Q. 42. Were the various forms of joint or seam unions for uniting metal sections specified by you in your last answer known to you in connection with the metal art at the date of the publication which you have been testifying regarding, the same being the year 1887?

A. Yes, and for the last forty years.

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I offer the publication in evidence and ask that the same be marked "Defendant's Exhibit Pattern Book."

Adjourned to 10 o'clock, Wednesday morning.

Philadelphia, July 1, 1914.

Met pursuant to adjournment.

Present: Same as before.

Q. 43. Mr. Hunter, Please examine claim 3 of the Nielsen Patent in suit, and state whether or not you find any provision in said claim as to the strips of which the horn is formed being composed of metal.

A. I have carefully re-read the claim referred to in your question and I find that there is nothing in the claim which provides that the horn is to be made of metal.

Direct examination closed.

(By Mr. HILLIARD.)

XQ. 44. Mr. Hunter, by whom are you immediately retained to testify in this suit?

A. That question did not come up. I was requested to take up this matter with Mr. Acker counsel for defendant whom I met for the first time a few days ago. I presume that the matter was brought to my attention on account of the manufacture and sale of horns of the talking machine of the Victor type being involved. [241]

I was about to go on my vacation and I took this matter up hurriedly and there had been no discussions regarding retainer in the matter.

XQ. 45. By the expression "horns of the Victor type being involved" do you mean horns made by

(Deposition of Rudolph M. Hunter.)

the Victor Talking Machine Co.?

By Mr. ACKER.—The question is objected to on the ground that it has not been shown or proven that this witness has any knowledge as to any horns having been manufactured by the Victor Co.

A. All I know regarding that matter is that horns of the character of horns "B" and "C" which I have before referred to in my testimony, are types of horns which have been sold by the Victor Co. and I understood that horns of this type was involved in this suit.

XQ. 46. Who first approached you on the matter of testifying in this suit?

A. Mr. Frederick A. Blount of Mr. Horace Pettit's office asked me to meet Mr. Acker in respect to the possibility of his desiring some testimony from me in respect to the matters involved in the present suit.

XQ. 47. Do you know whether or not any relation of any kind exists between Mr. Blount and the Victor Talking Machine Co.?

By Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent and on the further ground of not being proper cross-examination.

A. I do not. I only know that Mr. Blount is an attorney-at-law in Mr. Pettit's office and that Mr. Pettit has acted as counsel in patent matters for the Victor Talking Machine Co.

XQ. 48. Will you please state to what extent, if any, you have in the past rendered services to the

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Victor Talking Machine Co. in relation to the patents or inventions having to do with talking machines or parts?

Mr. ACKER.—The question is objected to as being immaterial, [242] irrelevant and incompetent and on the further ground that it is not proper cross-examination, and on the further ground as calling for testimony which is in no manner connected with or bearing on any of the issues involved in the present controversy.

A. I have acted both for and against the interest of the Victor Talking Machine Co. for approximately fifteen years. I have, in expert capacity, acted in the interests of the Victor Talking Machine Co. in nearly all of its litigation relating to inventions, but I have also had frequent occasions to act for others against the Victor Co. in special matters, but in these litigated matters there was no immediate conflict I merely wish to bring out the fact that I was not exclusively acting for the Victor Talking Machine Co. in the talking-machine art taken as a whole.

XQ. 49. With whom or what party does your contract to testify in this case exist?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent.

A. The matter came up so suddenly, as I before explained, on account of the possibility of my going out of the country on my vacation, that I took up the matter without any discussion as to any contract or agreement in respect to my testimony.

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XQ. 50. By whom or what party do you expect to be paid for your service for testifying in this case?

Mr. ACKER.—Same objection as to the previous question.

A. The question of recompense has not even been touched upon.

XQ. 51. Is it customary with you to appear and testify as an expert in patent suits without knowing by whom you are to be employed?

Mr. ACKER.—Same objection as to the previous question. At this time I desire to direct the Court's attention to the needless encumbering of the record with a line of examination which is so apparent is not proper cross-examination in any sense of the word. The Court will undoubtedly take recognition of the [243] fact that the present expert witness will expect compensation for his services and doubtless in entering into the case without a pre-arrangement for compensation he took into consideration the standing of the parties who approached him on the subject.

A. I frequently have taken up the matter of giving expert testimony in cases in which the time was limited and in which there was no discussion of any kind as to whom paid the bills I am usually satisfied in knowing the responsibility of the parties for whom I am acting; and as for charges, I do not discuss the extent of them, as I make my charges to suit what I consider they should be irrespective of the time consumed.

Complainant's counsel states at this point that he



(Deposition of Rudolph M. Hunter.)

does not consider the mere fact of this witness being paid for his services to be otherwise than perfectly regular and proper.

XQ. 52. Can you state whether or not the principal by whom your services are engaged is the defendant, Sherman, Clay & Co.?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent and on the further ground that of it not being proper cross-examination and on the further ground that the witness has stated on cross-examination that he took the matter up with counsel for defendant in the present suit without discussing one way or the other as to the parties to the suit.

Mr. HILLIARD.—The witness has also stated that he took the matter up with Mr. Blount of the office of Mr. Pettit who is counsel for the Victor Talking Machine Co.

Mr. ACKER.—Replying to the latter portion of Mr. Hilliard's statement that Mr. Pettit was the attorney for the Victor Talking Machine Co., I request the witness to read his answer to XQ. 47 previous to answering the last question.

A. When I took this matter up with Mr. Acker, I did not know who the complainant was nor who the defendant was, and was not interested as to the parties but was only thinking of the subject; that [244] is, the matters which would require expert evidence. In fact I made my experiments and tests and gave my direct evidence in part before I actually had the names of the complainant and defend-

(Deposition of Rudolph M. Hunter.)

ant. I was introduced to Mr. Acker by Mr. Blount and that was sufficient for me to proceed with Mr. Acker in respect to the matters involved in this suit, and I took up the matter with Mr. Acker without further discussion except the questions directly involved. I did not say that Mr. Pettit is counsel or attorney in anything connected with this suit, and I have no knowledge that he has any connection with it. He did know that I was familiar with the talking-machine art and scientific questions which would be involved therein and it was only natural that he should bring me in touch with Mr. Acker.

XQ. 53. Have you ever in the past been retained as expert in patent matters by the Edison Phonograph Co.?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent. Counsel realizes that all that he can do at this time is to protest against a line of examination wholly outside and going way beyond any of the interests involved in the present controversy and in a line clearly not cross-examination. I again direct the Court's attention to the manner in which the present cross-examination is being proceeded with and enter a strong protest at this time against the fishing expedition being now proceeded with by counsel for complainant as to securing from this witness in some manner or another evidence to be used in all probability against parties other than the party defendant to the present action.

A. No, I have not.

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XQ. 54. And the same question as to the Columbia Talking Machine Co.?

Mr. ACKER.—The same objection and statement as to the previous question. [245]

A. No, I have never been retained by the Columbia Phonograph Co.

XQ. 55. Do you consider yourself to be an expert in the construction of patents?

A. I presume by construction you mean the drafting of the specification and claims, keeping in mind the proper legal interpretation to be given to the language so employed. With that understanding, I would say that my long experience as well as various extensive experience in every branch of patent matters would qualify me in that capacity.

XQ. 56. By construction of patents, I referred to the interpretation of issued patents with a view to determining from their language the construction of the devices described in them and the mechanisms or devices, included within the scope of their claims?

A. The same qualifications which I referred to in my answer to cross-question 55 qualifies me to say that I am an expert in respect to capacity to interpret the language of specifications and claims of issued patents as to their scope and meaning, not only in respect to what is clearly illustrated and specifically defined in the patent, but also in respect to equivalency within the meaning of the terms of the claims.

XQ. 57. In your answer to question 7 you state that in your opinion the statements contained in the

(Deposition of Rudolph M. Hunter.)

patents as to the results to be secured by the constructions therein described and claimed is not warranted by the fact and that the result alleged to be accomplished are in fact not accomplished. I wish you would state what "results alleged to be accomplished are, as you understand them to be from the patent"?

A. The patentee states that the object of his invention—

"is to provide a horn for machines of this class which will do away with the mechanical, vibratory, and metallic sounds usually produced in the operation of such machines, and also produce a full, even, and continuous volume of sound in which the articulation is clear, full, and distinct." [246]

and in further discussing the construction of the horn which embodies the elements to be claimed, he sums up,

"it is the longitudinal ribs  $b^2$  which contribute mostly to the successful operation of the horn, said ribs serving to do away with the vibratory character of horns of this class as usually made and doing away with the metallic sound produced in the operation thereof."

The intent and purpose of the patent is to provide a construction of amplifying horn which will do away with the vibratory character incident to horns as usually constructed, and my testimony was to the effect that this was not possible of accomplishment

(Deposition of Rudolph M. Hunter.)

by any construction such as disclosed in the Nielsen Patent.

XQ. 58. Is your interpretation of the patent that its object and purpose is to eliminate vibration in phonograph horns existing at the date of this patent and prior thereto?

A. Naturally the patent is speaking of "horns of this class as usually made" must have referred to horns existing at and prior to the date of the application of the patent. In regard to "eliminating" the vibrations I do not find that word in the specification, but I do find that the patentee states that his object is to provide a horn "which will do away with the "mechanical, vibratory, and metallic sounds usually produced" and again that the ribs which he employs "serve to do away with the vibratory character of horns of this class as usually made" and the ordinary interpretation of that language would justify the assumption of the elimination of the said vibration.

XQ. 59. Do you consider that elimination of vibration is essential to do away with the mechanical, vibratory and metallic sound usually produced in phonograph horns? I will refer you to the phraseology of the patent contained in lines 11 to 19 inclusive.

A. The language of the specification, if closely analyzed, is very vague and inconsistent with what actually and does necessarily [247] take place in any amplifying horn. The language distinctly says that the horn "will do away with \* \* \* vibratory \* \* \* sound usually produced in the opera-



(Deposition of Rudolph M. Hunter.)

tion of such machines'' and this is an utter impossibility, for it is not possible to prevent vibrations in any horn in which sound impulses are transmitted through it. I have before pointed out that so far as mechanical or metallic sounds, so called, are to be considered, these are due almost exclusively to the recording, and not to the reproducing instrument, which employs the amplifying horn. The patentee evidently had some idea that by ribbing the horn he could stop its vibration and I read his specification as if that was his object.

XQ. 60. Disregarding the specification of the patent, do you consider that for the purpose of doing away with the mechanical, vibratory and metallic sounds usually produced in the operation of phonograph horns at the date of this patent and prior thereto, elimination of vibration was necessary?

A. I must take exception to your assumption contained in the question. You overlook the fact, evidently, that I have stated that the so-called mechanical and metallic sounds being due to the reproducing or amplifying-horn is largely a matter of imagination. Of course, if we are to consider the word "vibratory" sounds, which are broadly included in your question, then it is self-evident fact that if we are to stop vibratory sounds in the horn we must eliminate the vibrations in the horn.

XQ. 61. Do you consider that the object of this patent was to eliminate all vibratory sounds?

A. That is what the language of the patent states, and I can only assume that that is what the patentee

(Deposition of Rudolph M. Hunter.)

evidently desired. Even if he did not expect to eliminate all of the vibrations, because I have stated that that was an impossibility, a liberal interpretation of the language of the patent to imply that the inventor only [248] contemplated the elimination of the greater part of the vibrations, still leaves the language and the disclosure in the patent as a misstatement of what actually does and must take place in any construction such as disclosed in that patent.

XQ. 62. Will you describe what you understand is meant by the term mechanical, vibratory and metallic sound?

Mr. ACKER.—Question is objected to as being immaterial, irrelevant and incompetent unless the question be confined to the witness' understanding of the expression referred to as derived from the specification of the patent in suit.

Mr. HILLIARD.—I will confine the question to those limits, and ask the witness to answer with that understanding.

A. Understanding those words "mechanical, vibratory and metallic" in the sense which they can only have when applied to the reproduction of sound, I will say that the mechanical sounds are those which are impressed upon the sonorous sound waves in the body of air within the horn by the mechanism of the reproducer, such as the scratching of the stylus upon the sound record, in addition to such corresponding sounds as would be produced by the record itself where mechanical sounds had been recorded at the time of making the record. By me-

(Deposition of Rudolph M. Hunter.)

tallic sounds I understand to be the reproducing of the recorded metallic sounds which have undesirably, for the reasons already testified to, been impressed upon the sound record, and which must necessarily be reproduced through the sound box and the sonorous body of air of the amplifying horn. By the word "vibratory" as applied to sound, I can simply include all vibrations, for it has no other meaning and, of course, to interpret that word in that manner would be to eliminate all sound. In any event, neither the mechanical nor the vibratory sounds upon which the music depends, nor the metallic sounds are, or can be, eliminated by the amplifying horn or any mechanical construction thereof. It is an utter impossibility to do so, because they do not arise in the horn and no [249] change of the horn can eliminate them. They are reproduced in the sonorous body of air within the horn and this is independent of the particular mechanical construction of the horn itself other than that the horn is the boundary of such sonorous body of air.

XQ. 63. In answering your last question, did you have in mind that the term mechanical, vibratory and metallic sound is qualified by the phrase "usually produced in the operation of such machines"?

A. Yes, but I have taken the word produced as meaning reproduced, as these machines are reproducing machines. I have very clearly and repeatedly stated that the mechanical and metallic sounds are not produced in the horn, they are merely reproduced in amplified form by the presence of the sonorous

(Deposition of Rudolph M. Hunter.)

body of air within the horn.

XQ. 64. Do I correctly understand that in your answers to the last two questions, you have defined your interpretation of the expression in the patent "mechanical, vibratory, and metallic sound usually produced in the operation of such machines"?

A. You are to understand that I am analyzing the statement which I find in the patent and applying it to what actually does take place, and I am merely stating my understanding of what takes place and have indicated that this was evidently contrary to what the patentee was trying to say. In other words, if his language was intended to mean that the amplifying horn through its metallic structure produced the mechanical, vibratory and metallic sound, he is in error, but that such sounds are produced is a fact, but they are not produced by the construction of the amplifying horn and his construction of that horn does not eliminate them by preventing them from being produced.

Adjourned until Thursday, at 10 A. M. [250]

Philadelphia, July 2, 1915.

Met pursuant to adjournment.

Present: Same as before.

#### Cross-examination Continued.

XQ. 65. In your comparative tests of the horns "A" and "B," what were you trying to determine?

A. I was trying to determine what, if any, were the differences in the results of the different horns. The difference in construction is self-apparent. If there was any differences in results in the operation

(Deposition of Rudolph M. Hunter.)

of the horns that could be determined only by tests, and it was with this object in view that I made the tests.

XQ. 66. Cannot you state a little more specifically just what results you were endeavoring to determine in your comparative tests of the horns "A" and "B"?

A. I was endeavoring to determine what difference the use of these two horns would make upon the reproduced sounds as they would be delivered to the ear of a person standing in front of them and at the same time, in the making of those tests I kept in mind the language of the Nielsen Patent, in suit, with the special object of determining the correctness or incorrectness of the statements contained in the patent in respect to the results claimed to be accomplished by the construction of the horn described and claimed in the Nielsen Patent in suit.

XQ. 67. Through what physical effect did you endeavor to determine the difference that the use of the two horns "A" and "B" would make upon the reproduced sound?

A. The physical effect upon the ear, both directly when standing in front of the horns during the reproduction of speech and music of various characters similarly produced from each of the horns [251] and on the same machine and with the same sound-box and also when exploring the vibration of the metal surfaces of the horns during reproduction of this speech and music, to compare the vibratory action which is set up in the horns and which cannot



(Deposition of Rudolph M. Hunter.)

be seen directly, but which can be determined by the use of a suitable microphone device such as I have explained in my former testimony.

XQ. 68. What elements of the vibratory action did you determine by the tests which you followed?

A. I do not understand just what you mean by your question.

XQ. 69. Would you determine by your tests the amplitude of the vibrations by any absolute standard?

A. No, as I did not consider that was at all necessary. The positiveness of vibration or the lack of them, all of which would be due to their amplitude, would be readily determined by the use of the microphone, but would depend upon the ear to approximate the difference.

XQ. 70. What equality of conditions did you deem necessary in order to make a fair comparison of the horns "A" and "B" for your purposes?

A. As various records produce entirely different effects upon the ear when reproduced from the same horn, it was manifest that in making any comparisons between the results of the use of the two horns, it was necessary to use the same record under the same conditions except as to the change of the horns. In view of the fact that the horns were not of the same exact shape, the only proper test to determine their results with respect to the question of vibration by the natural hearing operation, would be for the person to stand at various distances in front of the horns. Of course, it would not be a proper test

(Deposition of Rudolph M. Hunter.)

in horns which differ in general shape to stand back of the horn or to the side of the horn when relying solely upon the ear unassisted. The [252] reason of this is that the general length and diameters of the horns, of whatever character they may be, always more or less affect the lateral vibrations and, therefore, the true results of the horns cannot be determined excepting when the hearer is in front of the horn where the sound waves, which are set up in the body of air within the horn, are enabled to direct themselves upon the air body between the bell outlet of the horn and the person standing in front of the horn. In respect to the other questions, as to the places of vibration in the horn or the extent of such vibrations, this is determined mechanically, through the microphone without any special interest in the beauty of the reproduction; and in making these latter tests, it is immaterial where the person stands. In making these various tests I did so with the horns in their natural open condition and also with various degrees of dampening by introducing handkerchiefs, for the purpose of deadening the external sounds in the general atmosphere while leaving, more or less pronounced, the mechanical vibrations in the horn structure itself. I subjected the various horns to similar tests. I do not consider that the mere general shape of the horns have any governing effect so far as inventions is concerned because, whether horns are long or short or relatively abrupt or not in their taper is a mere matter of fancy or convenience in manufacture. All shapes of horns have heretofore

(Deposition of Rudolph M. Hunter.)

been made and the general shape of the horn of exhibit "B" as well as the exhibit "A" are both old and well-known types. The continuous flare as in "Horn B" is common to all brass instruments, such as the French horn, for example, and that it is built up in sections is merely a matter of convenience for cheap construction; and moreover, as I have pointed out in the prior art the building up of a flaring horn of this character by gradually tapered sections or strips connected side by side was old and well known, for example, in the exhibit, "The Metal Worker Pattern [253] Book," on page 222, wherein is shown not only this gradual flaring curvature, but in addition, curvature in the direction of the axis of the horn, this being merely one example of the prior art which has been known to me in sheet-metal working well prior to 1900, this particular book having been known and examined by me long prior to that date.

XQ. 71. In order to make a fair comparative test between the horns "A" and "B" for the purposes for which you did make the tests you have testified about, what similarity in condition should be present; that is to say, for instance, as to the material of which the horns are constructed, its quality, thickness, the nature of the music played, and so forth. Of course this question does not take into consideration the shapes of the respective horns or the configuration of the parts of which they are constructed, which you may assume are essential points of difference in the light of the patent in suit?

Mr. ACKER.—The latter part of the question is

(Deposition of Rudolph M. Hunter.)

objected to as requiring the witness to assume something as being essentially different, and thereby restricting the witness to an answer not in accordance with the conditions existing in the making of the tests referred to in his testimony.

Mr. HILLIARD.—The witness has testified that he has made comparative tests of the two horns “A” and “B” for the purpose of determining certain results which he has stated. The point of my question is to determine what similarity or equality of condition must be present in the tests in order to insure results which will bring out the relative merits of the two horns insofar as they may vary in respect to the structural differences between them. The horns are obviously of different construction and equality of condition obviously does not exist in respect to their configuration, and the shape of the parts composing them [254] and the method by which they are joined together.

A. For the purposes of this testing and to guard against possible doubt in the results, I was careful to have the surface area of the two horns as nearly identical as it was possible to make them, and I have no reason to doubt that they differ in any material respect to this question of area. In the next place, the tin employed in the two horns may be assumed as being identical as to thickness, but it is manifest that the bell end of the horn “A” is of brass and not of tin, and this was employed because it was very difficult to make a bell of tin of one continuous piece in the short time which was allowed to me to have the

(Deposition of Rudolph M. Hunter.)

tests made. I have not considered that this difference in the use of brass for the bell horn "A" is a very material one, because it is of metal and so far as the advantages or disadvantages of the construction under consideration is concerned, the matter of the metallic vibration would be present in the case of brass just about as much as they would be present in the case of tin. The endeavor has been to make the two horns to conform mechanically to what would be the reasonable requirement for the purposes of the test, as was possible under the circumstances. In the case of the horns "D" and "E," the outward configurations were the same except for the presence of the ribs in the one and the omission of the ribs in the other, so that this difference in shape of the horns does not come into the test between those two horns "D" and "E."

XQ. 72. Have you named all the conditions which should be common to both horns to enable you to make a fair test of the two constructions embodied in the horns "A" and "B"?

A. To answer you more specifically upon this particular point, I will say no, because the horn "A" has not been made to produce a shape which would correspond more fully to the general shape of the horn "B"; that is to say, if I have had the time I would have [255] made an additional horn of the general construction of horn "A" which would have been more approximately the total length of the horn "B" and with a diameter at the bell end approximating to the diameter of the bell of horn "B."



(Deposition of Rudolph M. Hunter.)

As it was, I was using the particular size of bell available and making the sheet-metal conical tube sufficiently long to make up the additional area of metal necessary to correspond to the area of metal in the horn "B." The mere lengths and diameters of the horns are purely a matter of fancy with the manufacturer. At one time the idea was to get as big a horns as possible, to make a loud noise, but later, the tendency was to condense the apparatus and make the horn as small as possible, so as not to have it objectionable to the eye and to make it convenient in handling, and in this way the horns became shorter and of larger diameter at the open end. So much has this tendency to minimize the size of the horn or amplifier taken place, that in the more modern machines the horns are wholly concealed and are merely built into the cabinet or case containing the motor and other mechanism.

XQ. 73. Have you now named all conditions which should be present for the purpose of determining the relative merits of the two constructions embodied in the horns "A" and "B," respectively?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent. The witness has testified that he made his tests between a horn heretofore put on the market by the defendant and claimed to be an infringement of the Nielsen Patent and a horn of the prior art which existed prior to the date of the Nielsen Patent and known to the trade as the B. & G. horn, the purpose of the tests being to determine whether the construction and formation

(Deposition of Rudolph M. Hunter.)

of the defendant's horn produced a better and purer amplification of the reproduced recorded sound of the talking machine over those produced by the horns of the prior art and as contended for by the patentee of the letters patent in suit. In making this test he [256] is not called upon to provide any conditions other than those present and inherent in the horns themselves as placed on the market.

Mr. HILLIARD.—The witness may have testified to that, but he certainly has testified that he made a comparative test of these identical horns "A" and "B" now before him for the purpose of determining the relative merits of the respective constructions, and he has stated the results of that test. I wish to find out the conditions under which he made the tests and what conditions he deemed necessary should be common to the test of each horn for the purpose of determining the correctness of the results which he stated.

By relative merits I mean the relative merits in respect to the purposes for which he was making the test.

A. I believe I have named all the conditions which should be present for the purposes of the comparative tests made as between these two shapes or designs of horns "A" and "B" both representing conventional designs employed on the market in reproducing machines. As I before stated, I did not feel justified in changing the proportions of the horn "A" as to its diameter and length to correspond to the diameter and length of the horn "B" as I wished

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to maintain the substantial proportion of the horn "A" to correspond to the B. & G. horns as found on the market. It is also to be kept in mind that my tests were not designed with a view of determining whether one horn made a louder sound than the other, that is, amplified more than the other, as that is a matter of no consequence, but the test was with a view of determining whether the purity of reproduction was better or poorer in the case of one horn than the other and also to determine the nature of the vibrations or as to their elimination in case of the two designs of horns then subjected to the same conditions, that is reproducing from the same record with the same sound-box and with the same machine.

[257]

XQ. 74. In making your tests of the horns "A" and "B" you depended solely upon your ability to carry the impressions from one to the other in your mind, did you not?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent, inasmuch as it is only by the carrying in the mind that the users of horns of the type referred to are enabled to distinguish differences and the horn for amplifying purposes are addressed to the users thereof.

Mr. HILLIARD.—You have heard the statement of defendant's counsel, Mr. Hunter, is it correct?

Mr. ACKER.—Objected to as immaterial, irrelevant and incompetent.

A. I heard the objection, but it was only expressing what was to be my answer to your question, omit-

(Deposition of Rudolph M. Hunter.)

ting, however, the statement that the question was immaterial, irrelevant and incompetent as such characterizations would be out of my province. I might add, that the reproduction of sound so far as talking machines are concerned, can only be considered good or bad, pure or imperfect according to the training of the ear of the hearer, and therefore, naturally I depended solely upon the impression which I received through the ear. I, however, made a very large number of tests and I made the changes from one horn to the other with great rapidity and with concentration of my hearing upon certain definite reproductions from the record so as not to confuse the impressions which I received. Of course, this is also in addition to the reproductions from the whole record which I also made, the latter being to enable me to select special parts of each record upon which to make the more concise tests.

XQ. 75. In comparing the extent of the vibrations of the two horns, you depended solely upon your ability to carry the impressions from one to the other in your mind, did you not?

Mr. ACKER.—The question is objected to as immaterial, irrelevant [258] and incompetent and on the further ground that this witness has repeatedly stated that he employed a microphone in connection with determining the vibrations of the horn.

A. It was, of course, necessary for me to carry the impressions received in testing one horn during the short interval of changing the horn and reproducing the same sounds to give me the impression of the

(Deposition of Rudolph M. Hunter.)

reproduction of the horn to be compared. I, of course, could not listen to the two horns at the same instant. This statement applies both to the tests made with and without the microphone.

XQ. 76. In your answer to question 12, page 21, you say that as between the horns "A" and "B" it is your opinion that the horn "A" had less vibration than the horn "B." Will you state what you mean by "less vibration"? That is as to whether you refer to amplitude of vibration, extent of surface vibrated or otherwise?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent unless the question is confined to the vibration as set forth and referred to in the patent in suit.

Mr. HILLIARD.—I am merely asking the witness to state what he meant by an expression which he used. He can state by reference to the patent or otherwise so long as he states what he meant by the expression.

A. I was referring to the amplitude of vibration, that is, the violence of vibration and was not concerned with the fine vibrations of small amplitude.

XQ. 77. Can you indicate by chart or sketch the position of the nodal lines in the horn "A"? If you can do so I will ask you to assume any normal conditions that you desire.

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent.

A. I do not think that any definite diagram could be made because the nodal lines or places of relatively



(Deposition of Rudolph M. Hunter.)

nonvibration will change with every material change in the nature of the sound being [259] amplified and also with the changes in the intensity of the sound. The general nodal lines which may be considered as being more pronounced in the vibration of the horns, will be in the direction of the length and they will increase in the case of a horn like the horn "A" in the width of the surface between any two seams. This can better be understood if we consider a violin string stretched across a bridge which establishes one nodal point in addition to the two ends of the string providing two other nodal points. In the vibration of that string, the length between the bridge and the short length of the string on the one side of the bridge determines the maximum length of the distance between what would be the nodes on the long end of the string where the long end was exactly a multiple of the length of the short end. There would therefore be a number of nodes in the vibration of that string. By shortening the length of the long end of the strings by the fingers, as is common in playing the violin, for example, the subdivision of the string as to the position of the nodes increases and consequently the position of the nodes vary with the different sounds emitted. In the vibration of plates or surfaces, the same change in the position of the nodes take place with respect to the width and length of the plate, but in this case the intensity of the sound causes the shifting of the nodes instead of the violence of the vibration of the strings by the bow. As the amplifying horn is subjected to

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all the varying conditions of sound produced by the sound-box and record, it is manifest that there is ever a constant shifting of these nodal points. It would not be possible to make an actual diagram to illustrate these conditions.

XQ. 78. Could you make a diagram which would show such conditions with a sufficient degree of accuracy for the purpose of making a comparison between the horns "A" and "B"?

A. Just at the moment I am not sure that that can be done, but I [260] will take the matter under consideration and state a little later whether I think I could make such a diagram.

XQ. 79. Is it not true that a rigid surface in a plate of uniform thickness establishes a node in that plate?

A. That is true if you mean by a rigid surface as a part of the surface which is positively held against vibration as if it were clamped. Any plate at the point where it is claimed and rigidly held, as in a vise, determines a node at that point.

XQ. 80. Are you familiar with the number and extent of the experiments, if any, made in the phonograph art for the purpose of producing a satisfactory amplifying horn, prior to the date of this patent?

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent and on the further ground that it assumes that a satisfactory amplifying horn had not been in use in the art connected with talking machines prior to the date of the letters patent in suit, and which assumption is unwarranted

(Deposition of Rudolph M. Hunter.)

by anything contained in the record herein.

Mr. HILLIARD.—Question withdrawn.

XQ. 81. Will you state from your experience and knowledge of the phonographic art, whether or not experiments had been made prior to the date of this patent for the purpose of producing amplifying horns?

Mr. ACKER.—Objected to as immaterial, irrelevant and incompetent.

A. Yes, experiments were made when the tendency was to have enormously large horns in which the size and weight were mechanically objectionable. Various changes were made in the construction of the machine to eliminate the objectionable weight upon the sound-box and stylus which interfered with the reproduction, and also these experiments and improvements were to enable the horn to be [261] adjusted irrespective of the movements of the sound-box so that the horn could be directed to throw the sound into different directions in the room without having to turn the whole instrument. Aside from these experiments, there were various experiments made to simplify the construction of the horn and to give it ornamental shape and also to proportionate it to give the desired amplification with a reasonably short length. There were also some experiments made in employing combination horn structures where one part would be sustained upon a tripod while the short portion would be a direct part of the machine in connection with the sound-box. There has also been improvements made in the construction

(Deposition of Rudolph M. Hunter.)

of the concealed wooden horn which involved mechanical requirements. However, in most of the horns the question of reproduction was only a secondary matter to that of construction, as it was generally understood that any tubular structure which had a flare would contain a sonorous body of air that would amplify. It is my opinion that very few persons in the talking-machine art have understood the real requirements of producing records for reproduction and that they frequently attribute to the amplifying horn, defects which are not due to it at all, as I have before pointed out.

XQ. 82. I call your attention to a book entitled "A Complete Manual of the Edison Phonograph" by George E. Tewksbury, from which I read the following on page 71:

"With the phonograph a speaking tube and listening tube are provided. The speaking tube for dictation purposes meets the conditions acceptably. The single tube for listening is the best device for the purpose. But for concert use and public entertainment, the sound must be thrown out so that many persons can hear it, and for this purpose numerous types of amplifying horns have been produced. It would astonish the casual reader to learn of the number and thoroughness of the experiments in that direction. Mr. Edison has himself tried a vast number of sizes and shapes, out of all sorts of material. Other experimentalists and enthusiasts have gone over the same ground, and

(Deposition of Rudolph M. Hunter.)

branched out into new paths. Yet all have come back to the main-travelled road. Wood, iron, steel, zinc, copper, brass, tin, aluminum, cornet metal, german silver, have been tried. Glass, too, and hard rubber, paper-maché, and probably every other product that nature yields or man contrives." [262]

and I ask you whether or not you agree with the statements contained in the portion read, assuming that they refer to the condition of the phonograph art in the year 1897 and prior thereto. Of course, I do not ask you whether or not it would "astonish the casual reader to learn of the number and thoroughness of the experiments" or as to whether other conclusions of that nature are true. You may have the book for examination.

Mr. ACKER.—The question is objected to as immaterial, irrelevant and incompetent and on the further ground that it is not proper cross-examination, and I take occasion to caution counsel that if he pursues his examination relative to this so-called publication, he makes the witness his own and becomes bound by the answers given.

Complainant's counsel states that he is merely submitting to the witness a statement of fact relative to conditions concerning which the witness has testified and does not at present, at least, undertake to prove the correctness of the statement by the book itself.

A. Before answering your question, as you have only quoted an extract from the whole chapter, and as I do not recognize the book as one familiar to me,



(Deposition of Rudolph M. Hunter.)

I prefer to read the whole paragraph before I can testify.

Adjourned until 2 P. M.

Met after recess.

The WITNESS.—(Continuing.) While I have no reason to criticise the statements as being the understanding of Mr. Tewsbury, the author of the book, I do not agree that this statement which you have quoted to me is one which properly defines the condition in respect to amplifying horns which are involved in the present suit; and therefore the quotation is apt to be misleading if not fully understood as to its real intent and purport herein. The character of the machine to which [263] that quotation applies is the phonograph of Edison in which the same instrument records and reproduces and the problem which Mr. Edison had was to find some convenient small horn which would both answer for recording and reproducing or amplifying. As is evident from the article, difficulty was had in finding a common ground as to construction between the recording and amplifying horn and this confirms what I have so frequently said in this testimony that the problems are entirely different, the recording being in effect a closed horn or tube while the reproducer or amplifying horn is an open tube. Furthermore, they are required to operate in connection with sounds produced under different conditions. I have before stated that no horn which is used for recording is suitable for reproducing. Furthermore, I do not agree with the

(Deposition of Rudolph M. Hunter.)

final statement of the paragraph you quoted from, which reads as follows:

“Any horn to be good must come out of sound metal, and be perfectly joined. Ordinary joining will not do, and imperfect metal is a delusion.”

The reason that I do not agree with this is that in the light of experience of 17 years after that publication appeared, manufacturers of talking machines have largely discarded the use of metal in the horns and are employing wood. I do agree, however, with the statement that if metal is employed the seams would be perfectly joined. The article from which you quoted applies solely to the experimental work in Edison's laboratory designed to accomplish a certain special result which does not pertain to ordinary talking machines as found on the market, as these are solely for reproducing and not for recording. I would further call attention to the fact that the illustration, facing page 71, from which your quotation is made, illustrates *recording* horns as of that date, 1897 and prior, and, therefore, is not to be considered as a full exemplification of what might be employed under the constructions [264] of said date in respect to amplifying horns. I note, however, that in the illustration there are at least two bell-mouth horns shown in which the bell curved gradually along the length of the horn.

XQ. 83. Do you agree with the statement on page 72 in the same book as follows:

“The latitude as to form and shape being

(Deposition of Rudolph M. Hunter.)

greater than the resource in material, there having been almost innumerable attempts in that line."

A. I only agree with that statement in respect to its application to Mr. Edison's special experimental work in which he was endeavoring to make the same horn act for recording sound as well as for reproducing sound. I must admit, however, that there was very great latitude possible in the shaping the horn as to size and as to convenience in its construction in the shop, considerable experimenting was no doubt done in this respect, as I have before indicated in my testimony on cross-examination.

XQ. 84. Are you now able to say whether or not you can chart out or sketch the nodal lines of the horn "A" under the conditions mentioned in my previous question to that effect?

A. After careful consideration of the matter, it is my opinion that the nodal lines which form on the metal surface of the horns in use cannot be illustrated with any degree of definiteness which could be of any use by way of explanation as to their alinement and which could be considered an accurate exposition of the results of the experiment. The fact is, that these nodal lines vary in their arrangement longitudinally, along the length of the horn because of the different surface areas presented and also because there is always a point between the ending of one arrangement due to a certain diameter or surface width and the beginning of the next position of the rearrangement due to a sufficient change in these

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dimensions. It is my opinion that a diagram could not be made which would be a [265] reliable illustration of the position of these nodal lines, except by charting them after a very extensive series of definite experiments for that purpose and these, of course, I did not attempt to make. What I was more concerned in was, the determination of the presence of vibration in the metal of the horn and more particularly along the lines of the seams or ribs according to the particular horn I might be testing. It is also to be kept in mind that these nodal lines vary with the intensity of sound being reproduced and consequently their position for one sound would not apply to their position for a more intense or less intense sound. I do not think that it would be possible for me to make any diagram which could be considered as sufficiently accurate to define just what the nodal lines are which takes place in these horns or any of them.

XQ. 85. Is your answer the same as to the remaining horns designated as "B," "C," "D," "E" and "F," or any of them?

A. It is. I have purposely included all of the horns in my previous answer.

XQ. 86. Did you keep any notes or data of any kind during the course of experiments?

A. No, I did not keep any notes as to each particular experiment, because, as you will understand, the results with every sound and intensity of sound that was being reproduced, and beyond certain fundamental results, namely, those to which I have testified, I

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did not consider that these results vary of the tests would be material. The two main things in the test were to determine by standing in front of the horns during reproduction whether the reproduction were impressed with extraneous sounds as stated to occur in the Nielsen Patent in suit, and secondly to determine whether or not the so-called ribs of the Nielsen construction or of the seams employed in the defendant's construction of horn or the mere bends [266] without seams or ribs such as in "Horn E" vibrated under normal conditions of operation of the reproducing instrument as a whole.

Cross-examination closed.

Mr. HILLIARD.—I ask to have marked for identification the book shown the witness, the same to be marked "Complainant's Exhibit marked for Identification Edison Manual."

Redirect Examination by Mr. ACKER.

RDQ. 87. Mr. Hunter, is there anything you desire at this time to add to the testimony just given by you in the way of explanation or otherwise?

A. I might say that in making the tests to satisfy myself as to whether there were or were not the elimination of vibrations by the employment *or* ribs or seams in the amplifying horn structures, I employed the only possible ways of determining the presence of such vibrations, namely, by the use of the ear directly and through the use of microphone devices, as the ear is the only means of detect-



(Deposition of Rudolph M. Hunter.)

ing a possible or objectionable extraneous sound which may be emitted from the reproducing machine, it should also be the most available detector of such sounds and vibrations which cause them, if they are present, available in making the experiments.

RDQ. 88. I note in your answer to XQ. 82 the portion appearing thereof on page 89 that you designate the series of horns appearing in the book just marked for identification and on page 70 thereof as illustrations of recording horns and employed in connection with the Edison machine referred to in the said publication for recording and reproducing purposes. Please explain how a horn adapted for these purposes in connection with an Edison machine differentiates from an amplifying horn employed in connection with the disc talking machine placed on the market, that is a machine by the defendant company?

A. In the case of the machine put on the market by the defendant company, the amplifying horn is supported upon a bracket and [267] into the small end of the horn is delivered the sound vibrations from the sound-box which is allowed to travel across the sound record, the sound vibrations produced in the sound-box being delivered to the small end of the amplifying horn by a swinging tube. In this case, the great weight of the horn is supported by the bracket and does not come upon the sound-box and does not partake of the movement of the sound-box. In the Edison form of machine referred

(Deposition of Rudolph M. Hunter.)

to in the publication, the sound-box was caused to travel over the length of a revolving cylinder of wax upon the periphery of which a helical vertically undulating record was engraved. On page 18 of the book is shown a perspective view of one of the Edison machines without the horn attachment. The horn or the hearing tubes as the case may be are attached to the tubular part 89 back of the sound-box. On page 14 the hearing tubes are shown as so connected at the point 61. This is also shown at 89 on page 31, the upper figure on this page having the hearing tubes and the lower figure showing the use of a mouth-piece 29, the latter being for recording and the former being for reproducing. When horns are employed in place of the hearing tube, they are fixed either directly upon the tubular projection 89 on page 18 and carried with the sound-box or where they are of large size they have been supported on a tripod or otherwise and the small end of the horn connected by a flexible tube very much as the mouth-piece is connected by the flexible tube 29 on page 31. In this Edison machine the record was engraved upon the wax surface of the cylinder by talking into the horn and then by readjusting the sound-box to its original position, the recorded sound so made would then be delivered through the same horn. As I understand it, the tubes or horns illustrated on page 70 are various forms which Edison seems to have used in his endeavor to make a recording horn answer the purpose of a reproducing horn. As I [268] have be-

(Deposition of Rudolph M. Hunter.)

fore pointed out, in the Edison machine the horn which he was employing for recording was also required to reproduce the sound recorded, and these were inconsistent requirements from a single horn, because a horn which is suitable for recording is not suitable for reproducing, and therefore Edison's experiments in that line were only in connection with the difficult problem which he set out to accomplish and which should never have been attempted.

In the case of the horns employed in the machine put on the market by the defendant, and I am not referring to the disc machine which employs laterally undulating sound record, the amplifying horn was only required to reproduce the sounds which were recorded in the disc by an entirely different machine, which machine is only employed at the factory where the sound records are made. The problem was a different problem from the horns employed on the defendant's machine. In the machine sold by the defendant, the horn had no difficult problem to solve, as it were, since the only real function of the horn is to give proper amplification and delivery of the amplified sounds to the hearers, the character of the sound already having been determined by the recording machine. In other words, one recording machine might be the source of the production of records which might be used on a million reproducing machines, whereas in the Edison machine described in the publication, the object was to make each machine reproduce its own records.

RDQ. 89. Am I correct in understanding the last

(Deposition of Rudolph M. Hunter.)

answer that the Edison machine referred to in the book marked for identification is a machine by which the owner thereof may make thereon by the use of a wax cylinder his own records and at the same time the machine be employed for the reproduction of such recorded record sounds? By the expression the same time as used in the question, I mean that you could use the machine for each purpose? [269]

A. Yes, you are correct.

RDQ. 90. Is it your understanding that the matter contained in the book publication marked for identification relates to the problems and difficulties incident to the Edison machine, or does it deal with the problems of the talking machine art generally?

Mr. HILLIARD.—Objected to as immaterial.

A. In my opinion it deals with the problem which is specifically presented by the Edison machine, a problem which does not come into the use of a machine of the character sold by the defendant and employing the disc record.

Redirect examination closed.

It is hereby stipulated by and between counsel that all the exhibits, physical and documentary introduced during the taking of testimony both here and in Pittsburgh, may be withdrawn without order of Court when desired by counsel for either side for use in connection with the equity suit pending in the United States District Court for the District of New Jersey and entitled Searchlight Horn Co. vs. Victor Talking Machine Co..

(The signature of the witness is waived.)

Commonwealth of Pennsylvania,  
County of Philadelphia,—ss.

I, Alexander Park, a Notary Public in and for the Commonwealth of Pennsylvania, county of Philadelphia, duly commissioned and qualified and authorized to administer oaths, and to take and certify depositions, do hereby certify that pursuant to notice issued and served in the civil cause pending in the United States District Court for the Northern District of California, Second Division, in Equity—No. 15,623, wherein the Searchlight Horn Company is plaintiff and Sherman, Clay & [270] Company is defendant, I was attended at my office, 705 Witherspoon Building, in the city of Philadelphia, county of Philadelphia, Commonwealth of Pennsylvania, by Frederick S. Duncan and John H. Hilliard, of counsel for the plaintiff, and Nicholas A. Acker, of counsel for the defendant, on the 25th, 26th, 27th, 29th, and 30th days of June, 1914, and on the 1st and 2d days of July, 1914, and by the witnesses Norman S. Hobbs, Virginius W. Moody, Charles F. Willard and Rudolph M. Hunter, who were of sound mind and lawful age and were by me first carefully examined and cautioned, and duly sworn to testify the truth, the whole truth, and nothing but the truth, and they thereupon testified as above shown, and that the depositions of the said Norman S. Hobbs, Virginius W. Moody and Charles F. Willard, were taken stenographically by Cora A. Witmer, who was by me first duly sworn to truthfully take and reduce to typewriting the said depo-



sitions of the said Norman S. Hobbs, Virginius W. Moody and Charles F. Willard, and the said depositions of the said Norman S. Hobbs, Virginius W. Moody and Charles F. Willard were reduced to type-writing by the said Cora A. Witmer in my presence and under my personal supervision. That the deposition of the said Rudolph M. Hunter was taken directly on the typewriter by the said Cora A. Witmer and in my presence and under my personal supervision, and by agreement of counsel the said deposition of Rudolph M. Hunter was taken on non-lined paper, and the said depositions of the said Norman S. Hobbs, Virginius W. Moody, Charles F. Willard and Rudolph M. Hunter were taken at the place and time specified pursuant to notice. I further certify that the reason for taking the said depositions was, and is, and the fact was and is that the said deponents live more than 100 miles from the place where the said civil suit is appointed by law to be tried, the witness Norman S. Hobbs, being a resident of Brooklyn, New York, the witness Virginius W. Moody, being a resident of [271] New York City, New York, the witness Charles F. Willard, being a resident of Camden, New Jersey, and the witness Rudolph M. Hunter, being a resident of Philadelphia, Pennsylvania. That I am neither of counsel nor attorney to either of the parties to the said suit, nor interested in the event of said cause, and that it being impracticable for me to deliver the said depositions into the court for which they were taken, I have retained the same for the purpose of being sealed up and directed under my

own hand and speedily and safely transmitted to the said court for which they were taken and to remain under my seal until there opened.

As witness my hand and seal as such notary public at Philadelphia, Pennsylvania, on the 21st day of July, A. D. 1914.

ALEXANDER PARK, [Seal]

Notary Public, Commonwealth of Pennsylvania,  
County of Philadelphia.

[Endorsed]: Filed Jul. 27, 1914. W. B. Maling,  
Clerk. By J. A. Schaertzer, Deputy Clerk. [272]

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(Title of Court and Cause.)

**Defendant's Notice of Taking Depositions.**

PLEASE TAKE NOTICE that defendant herein, pursuant to the statutes in such case made and provided will take the testimony of

Ellsworth A. Hawthorne, who resides at Bridgeport, Conn.;

John H. George, who resides at Bridgeport, Conn.;

Frank H. Stewart, who resides at Philadelphia, Pa.;

Horace Sheble, who resides at Philadelphia, Pa.;

John Kaiser, who resides in New York, N. Y.;

Walter H. Miller, who resides in Orange, N. J.;

Edward W. Meeker, who resides at Orange, N. J.;

Camillus A. Senne, who resides in New York, N. Y.;

William A. Lawrence, who resides in East Orange, N. J.;

Joseph F. McCoy, who resides in Orange, N. J.;

Louis Hicks, who resides in Englewood, N. J.

And of others, whose names and residences will hereafter be given, on due notice, each and all of whom reside and live at a greater distance from the place of trial herein than one hundred (100) miles and more than one hundred miles from any place at which a District Court of the United States for the Northern District of California, Second Division, is appointed to be held by law, for use on behalf of the defendant at the trial herein before Frank Z. Demarest, a notary public in and for the city, county and State of New York, or other notary public or officer duly authorized to take such testimony, who is not of counsel or attorney for either of the parties herein nor interested in the event of this cause, at the office of Louis Hicks, No. 233 Broadway, Borough of Manhattan, city, county and State of New York, on the 2d day of September, 1913, at 11 o'clock in the forenoon of that day.

You are invited to attend and cross-examine the witnesses produced. The cross-examination will be adjourned from day to day to such time as may be required, without further notice.

Dated August 22, 1913.

Yours, etc.,

DAN HADSELL,

Solicitor for Defendant.

LOUIS HICKS,

Of Counsel for Defendant.

To MILLER AND WHITE, Esqs.,  
Solicitors for Plaintiff,  
Crocker Building,  
San Francisco, Cal.

Service of a copy of the foregoing notice on this  
27th day of August, 1913, is hereby admitted.

Dated August —, 1913.

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Solicitors for Plaintiff. [273]

State of California,  
City and County of San Francisco,—ss.

V. G. Skinner, being first duly sworn, deposes and  
says:

That at all the times herein mentioned he was  
over the age of eighteen years and not a party to the  
above-entitled action. That on the 27th day of Au-  
gust, A. D. 1913, he served the hereunto attached no-  
tice of taking depositions upon the attorneys for the  
plaintiff by leaving a copy of the same with the sten-  
ographer in charge of the office of the said attorneys  
by showing to her the original to which this affidavit  
of service is attached. That at the time of the said  
service neither of the said attorneys were in the of-  
fice. That said service was made between the hours  
of nine o'clock A. M. and five o'clock P. M. of said  
day.

V. G. SKINNER.

Subscribed and sworn to before me this 30th day of  
August, A. D. 1913.

[Seal]

J. D. BROWN,  
Notary Public in and for the City and County of San  
Francisco, State of California. [274]

(Title of Court and Cause.)

**Defendant's Notice of Taking Depositions.**

PLEASE TAKE NOTICE that defendant herein, pursuant to the statutes in such case made and provided, will take the testimony of

W. E. Parker, who resides at Bridgeport, Conn.

Mr. Elwell, manager of the talking-machine department of the Heppe Co., 1022 Chestnut St., Philadelphia, Pa., who resides at Philadelphia, Pa.;

each of whom resides and lives at a greater distance from the place of trial herein than one hundred (100) miles and more than one hundred (100) miles from any place at which a District Court of the United States for the Northern District of California, Second Division, is appointed to be held by law, for use on behalf of the defendant at the trial herein; and

PLEASE TAKE NOTICE that the testimony of said W. E. Parker will be taken before Frank Z. Demarest, a notary public in and for the city, county and State of New York, or other notary public or officer duly authorized to take such testimony, who is not of counsel or attorney for either of the parties herein nor interested in the event of this cause, at the office of Louis Hicks, No. 233 Broadway, Borough of Manhattan, city, county and State of New York, on the 9th day of October, 1913, at 11 o'clock in the forenoon of that day; and

PLEASE TAKE NOTICE that the testimony of said Mr. Elwell will be taken before Alexander Park, a notary public in and for the city and county of



Philadelphia, State of Pennsylvania, or other notary public or officer duly authorized to take such testimony, who is not of counsel or attorney for either of the parties herein, nor interested in the event of this cause, at the office of Horace Pettit, No. 705 Witherspoon Building, Walnut St., below Broad St., Philadelphia, Pa., on the 10th day of October, 1913, at 11:00 o'clock in the forenoon of that day.

You are invited to attend and cross-examine the witnesses produced. The cross-examination will be adjourned from day to day to such time as may be required, without further notice.

Dated October 7th, 1913.

Yours, etc.,

DAN HADSELL,

Solicitor for Defendant.

LOUIS HICKS,

Of Counsel for Defendant.

To Searchlight Horn Co., Plaintiff,

MILLER & WHITE, Esqs.,

Solicitors for Plaintiff,

Crocker Building,

San Francisco, Cal.

Service of a copy of the foregoing notice on this 7th day of October, 1913, is hereby admitted.

Dated October 7th, 1913.

HADSELL & DUNCAN,

Of Counsel,

Solicitors for Plaintiff. [275]

(Title of Court and Cause.)

**Testimony on Behalf of the Defendant.**

Taken pursuant to notice under the Statutes of the United States in such case made and provided on the 2d day of September, 1913, at 11 A. M., before Frank Z Demarest, a notary public in and for the city, county and State of New York at the office of Louis Hicks, 233 Broadway, New York, N. Y.

Present: LOUIS HICKS, of Counsel for Defendant.

No appearance for Complainant.

**[Deposition of Walter H. Miller, for Defendant.]**

WALTER H. MILLER, being duly sworn, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. My name is Walter Henry Miller; 43 years old; reside at 26 Linden Place, Orange, New Jersey. My business is manager of the Recording Department of Thomas A. Edison, Inc., at 79 Fifth Avenue, New York.

By Mr. HICKS.—Complainant's counsel, Mr. John H. Miller, through his letters and through his New York representative, Mr. Catlow of the office of Messrs. Duncan & Duncan, has requested defendant's counsel to adjourn the taking of depositions on behalf of defendant under the notice served upon Messrs. Miller & White, solicitors for complainant. Mr. Catlow has stated that he will be present to-morrow. Therefore the continuation of the deposition of the present witness and the taking of the deposi-

(Deposition of Walter H. Miller.)

tions of the other witnesses named in the notice is adjourned to September 3, 1913, at 11 A. M., same place.

New York, Sept. 3, 1913.

Met pursuant to adjournment.

Present: JAMES N. CATLOW, Esq., Representing  
Miller & White, Esq., of Counsel for  
Plaintiff.

LOUIS HICKS, Esq., of Counsel for De-  
fendant.

WALTER H. MILLER resumes the stand.

It is agreed by and between counsel that the continuation of the deposition of the present witness and the taking of the depositions of the other witnesses named in the notice served on behalf of defendant is adjourned to September 11, 1913, at 11 A. M., same place; and that defendant's time to take depositions herein is extended two weeks from September 20, 1913. [276]

New York, September 11, 1913.

Met pursuant to adjournment.

Present: JOHN H. MILLER, Esq., and  
FREDERICK S. DUNCAN, Esq., Coun-  
sel for Plaintiff.

LOUIS HICKS, Counsel for Defendant.

Direct Examination of WALTER H. MILLER,  
Continued by Mr. HICKS.

Q. 2. Please state what experience you have had with respect to phonographs and talking machines generally.

(Deposition of Walter H. Miller.)

A. I have been in the phonograph business for the last twenty-three years experimenting with sound recording and reproducing and am now manager of the Recording Dept. of Thomas A. Edison, Inc. I was first connected with Mr. Edison at his laboratory assisting him in perfecting his first phonograph which used wax records. I then became an expert for the North American Phonograph Company. When this company went into the hands of a receiver we purchased part of their plant and with Mr. Walcutt and two others I formed a company named Walcutt, Miller & Co. This company was started in September, 1894. In February, 1896, I retired from this company and connected myself with the Phonograph Record and Supply Company. I retired from this company in March, 1897, and in May, 1897, I was engaged by the National Phonograph Company to take care of their recording plant and have been with that company to this day.

Q. 4. Is Thomas A. Edison, Inc., the same corporation as the National Phonograph Company with the exception of a change in name?      A. It is.

Q. 5. Do you know in what year the North American Phonograph Company was organized and please state in what year you became connected with it.

A. As near as I can remember the North American Phonograph Company was organized in 1889 or 1890 and it was about 1890 when I became connected with it. [277]

Q. 6. For how long before you became connected with the North American Phonograph Company

(Deposition of Walter H. Miller.)

were you working for Mr. Edison on phonograph matters?

A. I became connected with Mr. Edison during the fall of 1887.

Q. 7. Since the fall of 1887 have you been devoted exclusively to the phonograph or talking-machine business? A. I have.

Q. 8. Please state whether there was any phonograph business before you became connected with Mr. Edison in the fall of 1887.

A. Not to my knowledge.

Q. 9. Can you state whether since the fall of 1887 there has been any improvement in the reproduction of sound by means of phonographs or other talking machines; and if so, state to what that improvement has been due.

By Mr. MILLER.—This question is objected to as incompetent as calling for the opinion of the witness and not for a statement of fact.

A. Phonographs have been very much improved since that date. Improvements have been in the recording of the record and the material of which the records have been made, also the process used in the manufacture of these records and reproducing.

A. 10. Has there been any improvement in the construction and operation of the phonograph or machine used in reproducing sound from the sound record?

By Mr. MILLER.—Same objection as before.

A. There has been a number. The principal one affecting the reproduction has been the reproducer.



(Deposition of Walter H. Miller.)

Q. 11. Please state whether your work relating to phonographs since the fall of 1887 has dealt with the recording of the record, the material of which the record has been made, the process used in the manufacture of these records, the reproducing of sound therefrom and the construction and use of the reproducer.

A. I have been working on all these various developments since that time but the major part of my work has been in recording records. [278]

Q. 12. Have you, since the fall of 1887, been familiar with horns employed with the phonograph and other talking machines in the recording and reproduction of sound? A. I have.

Q. 13. Please state from your experience whether you have been able to observe that any part of the improvement in the reproduction of sound by means of the phonograph or other talking machine has been due to any change or improvement in the horn used therewith.

By Mr. MILLER.—Same objection as to Q. 9.

A. There has not. I had reproducing horns in 1900 at our recording plant at Orange which were equal if not superior to any now used on the market.

By Mr. MILLER.—I move to strike out all that portion of the answer commencing with "I had reproducing horns" as not responsive to the question and also as a mere statement of the opinion of the witness.

Q. 14. Please describe the reproducing horns which you had in 1900.

(Deposition of Walter H. Miller.)

By Mr. MILLER.—If this evidence is offered for the purpose of anticipation it is objected to on the ground that no notice of it has been set up in the answer.

A. This was a brass horn with a spun bell about two foot in diameter at the large opening and tapered down to the usual opening, five eighths of an inch. The length over all was about fifty-six inches.

Q. 15. Have you read the patent in suit No. 771,441 of October 4, 1904, to Nielsen? A. I have.

Q. 16. Do you understand the construction of the horn described therein? A. I do.

Q. 17. Are you familiar with the Edison straight horn and the Edison Cygnet horn that have been put upon the market by Thomas A. Edison, Inc., in recent years? A. I am.

Q. 18. Are you familiar with any horn put upon the market in recent years by the Victor Talking Machine Company being built up of tapering strips of metal joined together at their edges by lock seams?

A. I am. [279]

Q. 19. Please state whether there is any difference between the seams of the said two Edison horns referred to and the said Victor horn referred to on the one hand and the seam employed in constructing the Nielsen horn according to the description of the Nielsen patent in suit.

By Mr. MILLER.—Question objected to as incompetent, irrelevant and immaterial in that the witness has not qualified as a mechanical expert having such knowledge as is called for by the question and fur-

(Deposition of Walter H. Miller.)

thermore it is not the best evidence and merely calls for an opinion, the best evidence being the construction of the horns themselves from which the court can see the difference and similarities, if any.

By Mr. HICKS.—As the horns referred to are already in evidence in this suit on the motion for preliminary injunction and will be produced on the trial of this cause and since, in view of the objection, the witness will be qualified as a mechanical expert in the construction the witness is requested to answer the question now to save time.

A. The method of putting together the tapering strips of metal in the Nielsen horn is very different from the method used in putting together the Edison and Victor horns. In the Edison and Victor horns the tapering strips of metal are fastened together with what is known as the lock seam. The sides of each adjoining tapering strips are bent over U-shape and one locks within the other, a method which is ordinarily used by plumbers in laying tin roofs. The method used in the Nielsen horn, the tapering strips at their edges are bent at right angles forming an L. These L's are held together and soldered. Each seam has a stiffening effect on the horn similar to angle irons in general construction work and has a much more stiffening effect than the lock seam used in the Edison and Victor horns.

Q. 20. In your work relating to the phonograph since the fall of 1887 have you had occasion to design and construct horns for the recording of sound?

A. I have.

(Deposition of Walter H. Miller.)

Q. 21. In view of the objection by complainant's counsel please state to what extent you have designed and constructed horns for phonographs. [280]

A. I have possibly superintended the making the last twenty years of two or three hundred horns of various description, all horns which we use for recording are specially constructed horns and cannot be purchased on the open market and it is therefore very necessary to be familiar with horn constructions in order to have any success in recording a record.

Q. 22. Did you take any part in the designing and construction of the Edison Cygnet horn?

A. I did.

Q. 23. And the Edison straight horn?

A. I did not.

Q. 24. Is the Edison Cygnet horn one used for recording or reproducing?

A. It is used for reproducing.

Q. 25. Did you take any part in designing and constructing any other horn used for reproducing?

A. I have.

Q. 26. Have you ever known of a horn constructed according to the description of the Nielsen Patent in suit, having butt seams to join together the edges of the tapering strips of metal as described by you, being upon the market or in use among users of phonographs? A. I have not.

Q. 27. Please compare the reproducing horn, such as the fifty-six inch brass horns with a spun bell, with which you were familiar as early as 1900, with the Edison straight and Cygnet metal horns and the

(Deposition of Walter H. Miller.)

Victor metal horn referred to, consisting of tapering metal strips joined together at their edges by lock seams, with respect to their respective sound-producing qualities.

By Mr. MILLER.—Objected to as irrelevant, incompetent and immaterial.

By Mr. HICK.—Defendant's counsel understands that it is the position of complainant's counsel that an improvement in the reproduction of sound was brought about by the use of such horns and that such horns are an infringement of one or more of the claims of the patent in suit. It is the purpose of defendant's counsel to show whether or not the position of complainant's counsel is correct or not. [281]

A. The fifty-six inch brass bell spun horn gives a superior reproduction than the Edison straight or Cygnet horn both in volume and tone. The Victor horn I have never compared.

Q. 28. From your experience in the construction of horns for recording and reproducing sound and from your familiarity generally with such horns, can you state whether the construction of a horn according to the method described in the Nielsen Patent in suit, using the butt seam, is more or less difficult than the construction of a horn like the Edison straight horn which employs the lock seam? Please answer this question yes or no.

By Mr. MILLER.—Objected to as irrelevant, incompetent and immaterial, as showing no sufficient foundation laid and also as calling for the opinion of a witness on a matter concerning which he has



(Deposition of Walter H. Miller.)

not qualified as an expert for the purpose of giving an opinion.

A. Yes.

RECESS.

Q. 29. In view of the objection of complainant's counsel please state what experience, if any, you have had in the construction of metal horns built up of tapering strips of metal joined together at their edges, by some kind of seam.

A. I have constructed Cygnet shaped horns of tapering strips of metal; also made straight horns.

Q. 30. Please state whether the Cygnet and straight horns that you have made of tapering strips of metal joined together at their edges by seams have included horns for reproducing and for recording sound?

A. They have.

Q. 31. Now please state whether the construction of a horn according to the method described in the Nielsen Patent in suit, using the butt seam, is more or less difficult than the construction of a horn like the Edison straight horn which employs lock seams, and give your reasons.

By Mr. MILLER.—Same objection as to Q. 28.  
[282]

A. In the construction of the Edison straight horn the use of the lock seam in assembling the tapering strips is much easier and they can be assembled without a form as the lock seam assists the holding together while with the butt seam as in the Nielsen Patent some form is necessary to hold the tapering

(Deposition of Walter H. Miller.)

strips together while the butt seams are being soldered together.

Q. 32. In making the Nielsen horn with the butt seam is the use of solder essential?

By Mr. MILLER.—Same objection as to Q. 28.

A. It is not.

Q. 33. If solder is not employed how can the flanges or edges forming the butt seams of the Nielsen horn be secured together so that they will remain together after the horn has been removed from the form?

By Mr. MILLER.—Same objection as to Q. 28.

A. These flanges can be held together by small rivets or one of the flanges can be left a little longer than the other and bent over in the shape of a U.

Q. 34. Do you find in the Nielsen Patent in suit any suggestion of either of the two methods suggested by you in your last answer? A. I do not.

Q. 35. If the butt seam of the horn shown in the Nielsen Patent be made of the flanges shown in the patent, is the use of solder essential to join the strips together?

By Mr. MILLER.—Same objection as to Q. 28.

A. I would not say it was essential but preferable.

Q. 36. The Nielsen Patent does not disclose, so far as I can see, any provision for the use of rivets, nor does it disclose the bending over of either of the flanges of which the butt seam is made. Assuming that flanges are employed as shown and described in the Nielsen Patent do you know of any method whereby such flanges can be joined together without

(Deposition of Walter H. Miller.)

the use of material such as solder? [283]

By Mr. MILLER.—Same objection as to Q. 28.

A. In answer to Q. 29 I stated that flanges such as are used in the Nielsen Patent could be fastened together with rivets or one of the flanges can be left a little longer than the other and bent over in the shape of a U.

Q. 37. You have not understood my question. I understand that you say that the Nielsen Patent does not disclose the use of rivets and does not disclose the use of a flange that is longer than its adjacent flange. What I ask is whether if you use flanges such as are shown and described in the Nielsen Patent, both flanges being of the same height and no provision for the use of rivets being made, the flanges can be joined together without the use of material such as solder.

By Mr. MILLER.—Same objection as to Q. 28 and also as leading and suggestive and an attempt at the cross-examination of the witness.

By Mr. HICKS.—It is very clear that the witness did not understand the previous question.

A. There is no other method described in the Nielsen Patent of securing the tapering strips together except the use of solder.

Q. 38. And do you know any any other method that could be employed?

By Mr. MILLER.—Same objection as to Q. 28.

A. None except those mentioned in Q. No. 33.

Q. 39. In joining the tapering strips of metal together by the use of the lock seam in the construction of a horn for a phonograph is the use of solder or of

(Deposition of Walter H. Miller.)

anything else essential other than pressing the interlocking bent-over parts together?

By Mr. MILLER.—Same objection as to Q. 28 and as leading and suggestive.

A. No.

Q. 40. From the reading of the Nielsen Patent in suit and from your experience in the phonograph art, what do you understand to be the important feature or features of construction of the horn described in the patent? [284]

By Mr. MILLER.—Same objection as to Q. 28.

A. The features of construction of this horn, it seems that the idea was to construct a horn which was very stiff and exceptionally strong, a result obtained by the butt seam.

Q. 41. Will the butt seam make a horn stiffer or stronger than the lock seam, or other seam?

By Mr. MILLER.—Same objection as to Q. 28 also as leading and suggestive.

A. It will. The butt seam is the stiffest seam that I know of.

Q. 42. Can you explain why the butt seam produces a horn so stiff or strong; and if so, please do so.

By Mr. MILLER.—Same objection as to Q. 28.

A. The butt seam has the same stiffening effect as angle irons have in general construction work. The turning of the edges of the tapered strips at right angles give this angle iron effect.

Q. 43. Can you state when the National Phonograph Company began to make sound records?

By Mr. MILLER.—Objected to as incompetent, ir-

(Deposition of Walter H. Miller.)

relevant and immaterial.

A. Some time in May, 1897.

Q. 44. Where?

By Mr. MILLER.—Same objection.

A. Orange, New Jersey.

Q. 45. Did you take part in the making of those sound records at that time and place?

By Mr. MILLER.—Same objection. I desire that this objection be considered as interposed to all questions relating to the making of sound records.

By Mr. HICKS.—Defendant's counsel is pleased to learn that such objections are no longer to appear upon the record after each question. The purpose of defendant's counsel is to show that the witness employed horns at the time and place indicated in connection with the phonograph.

A. I did.

Q. 46. Have you at the present time any horn that was used by you [285] or under your direction at that time and place in the making of sound records?

A. I have.

Q. 47. Can you produce it here? A. No.

Q. 48. What has become of it?

A. I believe it was taken to San Francisco by Mr. Hicks.

Q. 49. Did you have it at the time you verified your affidavit, on June 5, 1913, upon the motion for preliminary injunction in this suit? A. I did.

Q. 50. Did you annex a photograph of the horn to your said affidavit? A. I did.

Q. 51. Was that photograph a correct photograph



(Deposition of Walter H. Miller.)

of the horn?      A. It was.

Q. 52. I show you a photograph. Please state what it is.

A. This is a reproducing horn, part of the small end of which is cut off in order to leave the opening about three inches. This horn was used in our recording rooms as a megaphone in announcing the names of selections which were recorded at that time. In speaking through a horn of this kind it enabled us to announce to more machines at one time and at the *same make* a more perfect announcement.

Q. 53. And is the photograph which I handed you a correct photograph of the horn which you say you used in recording sound records at Orange in May, 1897?      A. It is.

By Mr. HICKS.—As the horn shown by the photograph has for convenience at the trial of this cause and for the purposes of the argument of the appeal from the order for preliminary injunction been left by the defendant's counsel in San Francisco, together with a number of other horns used in this cause, the photograph is offered in evidence, and marked "Defendant's Exhibit, photograph of horn used by National Phonogoraph Co. in May, 1897, Frank Z. Demarest, Examiner."

By Mr. MILLER.—If the horn itself is introduced in evidence at the trial I make no objections to the printed photograph but if the horn is not introduced in evidence I object to the photograph as incompetent, [286] irrelevant and immaterial and as secondary evidence.

(Deposition of Walter H. Miller.)

Q. 54. I show you another photograph and ask you to state what it is.

A. This is a horn similar to the one described in my last answer except that it is not cut off at the small end and in this form it was used as a reproducing and recording horn.

Q. 55. Did you have the original horn from which this second photograph was made at the time you made your said affidavit of June 5, 1913, and did you annex to said affidavit a duplicate copy of said photograph?      A. I did.

Q. 56. What has become of the horn from which this second photograph was taken?

A. I understand that it has been taken to San Francisco.

By Mr. HICKS.—As the horn from which this second photograph was taken is at present in San Francisco, with the other horn mentioned, the photograph referred to is offered in evidence and is marked “Defendant’s Exhibit, photograph of horn showing the condition of the horn shown by ‘Defendant’s Exhibit, photograph of horn used by National Phonograph Co. in May, 1897’ before the small end thereof was cut off.”

Q. 57. How early to your knowledge, were horns such as those shown by the two photograph exhibits, just offered in evidence, upon the market and in use in the United States?

By Mr. MILLER.—I make the same statement regarding this second photograph as I did regarding the first photograph.

(Deposition of Walter H. Miller.)

A. I know that these horns were on the market as early as September, 1894, as they were sold by Walcutt, Miller & Company at Fourteenth Street, New York City.

Q. 58. Do you know whether the horns shown by these two photograph exhibits were used by the North American Company in the United States and before that company went into the hands of a receiver?

A. Some of these horns which we sold at that time were purchased from the receiver of the North American Phonograph Company. As to [287] just when the North American Company introduced them I do not remember.

Q. 59. Where did Walcutt, Miller & Co. purchase such horns from the North American Phonograph Co.?

A. The horns which we purchased from the North American Phonograph Company were ones that were in their recording plant at Fourteenth Street, New York, at the time the company went into the hands of a receiver. After that date I think we purchased them from the Tea Tray Company in Newark, New Jersey.

Q. 60. Please describe the construction and use in 1894, and prior thereto, of horns shown in the two photograph exhibits.

By Mr. MILLER.—Question *objection* to as incompetent, irrelevant and immaterial in so far as the construction is concerned because the horn itself is the best evidence of its construction and nothing that

(Deposition of Walter H. Miller.)

this witness can say could alter that construction.

By Mr. HICKS.—The testimony of the witness shows that he is an expert in this art and that his expert knowledge includes the construction and use of horns and all other parts of a phonograph from the beginning of the art to this day. The witness is competent to explain the construction and use of the horns in question.

By Mr. MILLER.—I am not objecting to the testimony in regard to the use of the horn but to the construction of the horn. The horn being before the Court the construction is apparent and it is a useless waste of time to have witnesses describe that construction.

A. These horns were constructed of brass, the body portion of the horn consists of two tapering strips put together with lock seams. The body portion of the horn was about twenty inches long. The bell portion of the horn was made of two pieces of sheet brass fastened together with lock seams. The body portion and the bell portion were also secured together with lock seams and they were used for recording and reproducing.

Q. 61. Who used the horn cut off at the small end and shown in the first exhibit photograph when the National Phonograph Company began [288] making sound records in Orange, New Jersey, in May, 1894?

A. This horn was used by Mr. Atz who was piccolo player in our band at the time and later we employed a man by the name of Edward Meecker to make all

(Deposition of Walter H. Miller.)

our announcements, and who used this horn.

Q. 62. Do you know whether Meecker was called away from his employment by the National Phonograph Company to go to the Spanish-American War?

A. He was.

Q. 63. Did he use this horn for making the announcements referred to by you before or after he was called away to go to the Spanish-American War?

A. Before.

Q. 64. Did he return to the employ of the National Phonograph Company after his return from the war?

A. He did.

Q. 65. And did he resume the use of this horn upon his return? A. He did.

Q. 66. What part, if any, did you take in the recording of sound records by the National Phonograph Company at Orange, N. J., in May, 1897, and in the use of this horn first by Atz and then by Meecker before Meecker was called away to the Spanish-American War?

A. I was manager of this department and directed them to use the horn.

Q. 67. In whose possession has this horn been since it was used in May, 1897, down to the time that you gave it to me in June, 1913?

A. It was stored away with a lot of other miscellaneous horns at the factory in Orange.

Q. 68. In the factory of what company?

A. I say the factory when I speak generally. These horns are stored in a room we have for the



(Deposition of Walter H. Miller.)

purpose in the laboratory of Mr. Edison at Orange, New Jersey.

Q. 69. Between the fall of 1887, when you became connected with Mr. Edison, and the year 1901, say, what materials were used to your knowledge, in this country, in the construction of horns for phonographs and similar machines? [289]

A. Tin, zinc, copper, wood, paper, glass and a composition such as used in ink rollers and rubber and brass, and aluminum.

Q. 70. Have you any personal knowledge of the use of celluloid for such purpose during said period?

A. I have. A few experimental horns were made of this material also.

Q. 71. Confining your statement to the period between the fall of 1887 and the close of the year 1901, say, and to use within the United States what were the sizes of the horns used for recording and reproducing sound with the phonograph and other similar machines?

A. The horns that were mostly used were ones that varied from eight to ten inches in length to six feet although Mr. Edison had one made for an experimental purpose, which was forty feet long. The diameter of these horns varied at the big end from two and a half inches to three feet except the special large horn which Mr. Edison had made, the large diameter of which was about twelve feet.

Q. 72. When was it that Mr. Edison had this horn, forty feet in length and a diameter of about twelve feet at the large end, made?

(Deposition of Walter H. Miller.)

A. As near as I can remember it was in the year 1888 or 1889.

Q. 73. Please describe the construction of this large horn.

A. It was made of heavy galvanized iron made in sections about eight feet long, the ends telescoped into one another and it was a gradual taper from the small end to the large end.

Q. 74. How was each section constructed?

A. That I do not remember.

Q. 75. Do you remember how many pieces of metal the sections were made of?

A. I do not, but it could not be made of one piece owing to the enormous size of the horn.

Q. 76. Please describe the manner in which the horn gradually tapered [290] from the small end to the large end.

A. The horn had a gradual taper from the small end, that is to say, the horn's diameter increased proportionately as regards the distance from the small end of the horn, or, in other words, it was cone shaped.

Q. 77. If you stretched a string taut from the small end to the large end of the horn so that the string was in a plane passing through the central axis of the horn and on the outside of the horn would the string have touched the outer surface of the horn at all points from the small to the large end?

A. It would.

Q. 78. From the fall of 1887 down to the close of the year 1901 in this country what method was em-

(Deposition of Walter H. Miller.)

ployed to your knowledge for joining together the edges of metal used in constructing the horns, when the material employed was metal?

A. During that period our horns were generally constructed with the lock seam and also the lap seam, by the lap seam I mean one piece of metal lays over the other and is soldered together.

Q. 79. From your description of a lap seam I would infer that the difference between the lap seam and the lock seam was that in forming the lap seam the edges of the metal were not bent over and that in forming the lock seam the edges of the metal were bent over. Is that correct? A. It is.

Q. 80. What have you to say with regard to the effect of the size of a horn for phonographs and similar machines upon the quality of the reproduction of sound from a phonograph record with the aid of the horn?

A. Small horns usually give a weaker and sharper reproduction than the larger ones. The larger the horn the tone is much fuller and sometimes louder although if a horn is made too large this improvement does not increase in proportion.

Q. 81. Are you familiar with the Kaiser horn and with Schoettel's [291] Mega Horn? A. I am.

Q. 82. Please compare the two.

A. Their general construction is the same as well as their shape; in fact, I can see no difference.

Q. 83. At the time you made your affidavit in this suit on June 5, 1913, did you produce a Kaiser or Mega horn? A. I did.

(Deposition of Walter H. Miller.)

Q. 84. What has become of it?

A. I believe it has been sent to San Francisco.

Q. 85. I show you a photograph and ask you to state whether or not it is a correct photograph of the Kaiser horn or Mega horn which you say has been sent to San Francisco? A. It is.

Q. 86. Did you deliver the horn from which this photograph was taken, to me? A. I did.

Q. 87. When did you first become acquainted with the Kaiser horn?

A. During the days of Walcutt, Miller & Co., 1894 and 1895.

Q. 88. Please compare the Kaiser horn or Mega horn shown in this photograph with the Kaiser horn with which you were familiar in the days of Walcutt, Miller & Company.

A. The same thing.

Q. 89. Can you give the history of the horn shown in the photograph of which we are speaking?

A. I do not remember any particular history connected with it. It has been kicking around in our laboratory for a long while.

Q. 90. What, if anything, did Walcutt, Miller & Company do with respect to the Kaiser horn?

A. Walcutt, Miller & Company had working for them a man by the name of John Kaiser. Mr. Kaiser outside of his work for the firm gave phonograph exhibits and he used this horn in giving these exhibits and later on started to manufacture them and sell them. As far as I can remember, Walcutt, Miller & Co. did not sell these horns.

(Deposition of Walter H. Miller.)

Q. 91. What material were the Kaiser horns made of with which you were familiar while you were with Walcutt, Miller & Co.? [292] A. Paper.

Q. 92. Of how many pieces of paper did the Kaiser horn consist?

A. That, of course, was according to the size of the horn, several sizes being made. The horn of which I give this photograph seems to have not less than twelve strips of paper. I do not recollect just how many were used in the construction.

Q. 93. Were Kaiser horns made prior to the year 1902, say, larger in size than the horn shown in the photograph?

A. I do not remember seeing any.

Q. Have you any such horn larger in size at the present time?

A. Not larger in diameter. We have some of similar shapes but longer. They are not Kaiser horns.

By Mr. HICKS.—The photograph last referred to by the witness is offered in evidence for the same reason and marked “Defendant’s Exhibit, Schoettel Mega Horn or Kaiser Horn, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—If the horn from which the photograph was made is introduced in evidence I will not object to the photograph. Otherwise I will object on the ground that the photograph is secondary evidence.

By Mr. HICKS.—It is the intention of defendant’s counsel to offer in evidence at the trial the horns from which the photographs were taken, defendant’s



(Deposition of Walter H. Miller.)

counsel being unable to produce at the present time the horns left in San Francisco for the reason stated.

Adjourned to Friday, September 12, at 10:30 A. M., same place.

Sept. 12, 1913.

Met pursuant to adjournment.

PRESENT: JOHN H. MILLER, Esq., Counsel for Plaintiff.

LOUIS HICKS, Counsel for Defendant.

Q. 95. What seam was employed for joining together the strips of paper of which the Kaiser horn was made up? [293]

A. I should say you would call it the lap seam.

Q. 96. What material was used to secure together the strips of paper of which the Kaiser horn was made?

A. I presume it was glue.

Q. 97. What was the shape of the Kaiser horn?

A. The Kaiser horn was what we usually called the bell-shaped; its sides formed a gradual curve from the large opening to the small or very nearly to the small end.

Q. 98. Did you employ the Kaiser horn for the reproduction of sound from the phonograph while you were with Walcutt, Miller & Company?

A. We did.

Q. 99. What result did you obtain from such use of the Kaiser horn at that time?

A. It was thought to be a superior horn to what we were selling. We used it at times for exhibiting records which we were selling.

(Deposition of Walter H. Miller.)

Q. 100. What was the horn that you were selling at that time, to which you considered the Kaiser horn superior?

A. As near as I can remember at that period we were selling with the phonographs purchased from us a Japan horn about twenty-six inches long and about twelve inches at its large opening. I think we also sold a few of the two-angled brass horns which I mentioned in my testimony before, which we cut off at the small end. I said two-angled horn because the other horn we sold was a one-angled horn.

Q. 101. Please refer to "Defendant's Exhibit, Photograph of Horn Used by National Phonograph Co. in May, 1897," and point out what are the two angles which you referred to in the answer to the last question.

A. One angle is made of the shape of the body of the horn and the flare of the horn has a much steeper angle.

Q. 102. By angle, you refer to the inclination of the body of the horn or the flare of the horn?

A. I do. Perhaps the words two different tapers might have made [294] my answer more plain.

Q. 103. Have you any other bell-shaped horn that you use with the phonograph for the reproduction of sound? A. I have.

Q. 104. Please produce it. A. I have it here.

Q. 105. Give the history of the horn which you have just produced.

A. This horn or similar horns was used by us in recording and reproducing phonograph records

(Deposition of Walter H. Miller.)

some time between 1898 and 1903. In fact, we have used these horns off and on from that date to the present time.

Q. 106. What do you mean by the expression "from that date" in your last answer?

A. I mean that I do not know the exact date that these horns were put in use, but it was some time between the periods of 1898 and 1903.

Q. 107. How do you fix the time at which you used the horn just produced by you as being between 1898 and 1903?

A. We removed our recording laboratory from Orange to New York in March, 1894 and I know that we used this horn two or three years previous to the removal of our laboratory. I also know that we used this horn to reproduce the masters made which were used with the molded record which was placed on the market in 1902. I mean 1904 and not 1894.

Q. 108. According to your last answer you used this horn as early as the year 1902. Can you carry the date back of 1902 by reference to any other date or occurrence of which you have a present positive recollection?

By Mr. MILLER.—Objected to as incompetent because it is leading and suggestive and not the proper way to bring out facts.

A. I cannot, although it should be understood that it was fully a year from the time the first masters were made for this process before the molded records were placed on the market. [295]

(Deposition of Walter H. Miller.)

Q. 109. Can you state of what material the horn that you have just produced was made?

A. We always among us called it papier-maché of a construction similar to some water-pails now in the market.

Q. 110. Have you had a photograph made of this horn? A. I have. Here it is.

By Mr. HICKS.—The horn just produced by the witness and the photograph thereof are offered in evidence and marked respectively “Defendant’s Exhibit, Papier-maché Horn used by Walter H. Miller Before March, 1904, Frank Z. Demarest, Examiner,” and “Defendant’s Exhibit, Photograph of Defendant’s Exhibit, Papier-maché Horn Used by Walter H. Miller Before March, 1904, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—If these exhibits are offered for the purpose of anticipation we object to them on the ground that no notice of such anticipation has been set up in the answer as required by the Statutes. If offered merely to show the state of the art, we have no objection.

By Mr. HICKS.—Reference to paragraph 14 of the answer will show that prior use of the Nielsen invention by Walter H. Miller, Thomas A. Edison, Inc., formerly National Phonograph Co., and others is set forth. Paragraph 15 prays leave to add other names when ascertained. Defendant’s counsel is investigating the prior art and will as soon as his investigation has been completed, request complainant’s counsel to stipulate that the answer may be

(Deposition of Walter H. Miller.)

amended where necessary or if complainant's counsel will not consent application for leave to amend the answer will be made to the court.

Q. 111. In your answer to Q. 108, you stated that you removed your recording laboratory in March, 1904, and that you used this horn two or three years previous to the removal of your laboratory. Whose laboratory did you refer to?

A. We always call among ourselves, the recording department our laboratory. This was the recording department of the National Phonograph Company.

Q. 112. Please state whether or not you made personal use of this horn before the removal of said laboratory in March, 1904?

By Mr. MILLER.—Question objected to as leading.

A. I did. [296]

Q. 113. Did anyone else to your knowledge make personal use of this horn before the removal of said laboratory in March, 1904; and if so, who?

By Mr. MILLER.—Same objection as to Q. 112, and the two exhibits last put in evidence.

A. Yes, Mr. Harvey Emmons.

Q. 114. Who was Mr. Harvey Emmons and where did he use this horn?

By Mr. MILLER.—Same objection as before.

A. Mr. Emmons was one of the employees of the recording laboratory and the horn was used in building 20 at the factory, Orange, New Jersey.

Q. 115. Please look at Fig. 3, of U. S. Patent No. 534,543 of Feb. 19, 1895, to Berliner, which I show



(Deposition of Walter H. Miller.)

you and which I shall shortly offer in evidence and state by what term the shape of that horn is described in the art.

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial.

A. It is termed the bell-shaped horn.

Q. 116. I ask you the same question with reference to Fig. 5 of U. S. Patent No. 739,954 of September 29, 1903, to Villy and with reference to Villy's British Patent No. 20,146 of 1902, Fig. 5, thereof.

By Mr. MILLER.—Same objection as before.

A. They are both bell-shaped horns.

Q. 117. And I ask you the same question with reference to Fig. 14, of French Patent to Turpin, No. 318,742 of February 17, 1902.

By Mr. MILLER.—Same objection.

A. This is also bell-shaped.

Q. 118. Please compare the shape of the horn shown in the drawing of the Nielsen Patent in suit, No. 771,441, with the shapes of the Kaiser horn, of the horn employed at the laboratory of the National Phonograph Company prior to March, 1904, and of the horns shown in [297] the figures referred to in the preceding questions of the Berliner, Villy and Turpin Patents.

A. The shapes of all these horns are very similar. The Nielsen, the Kaiser horn and the horn used at the laboratory prior to March, 1904, and the Berliner horn are identical. The horns of the two Villy Patents and the Turpin Patent have similar shaped bells but the body of the horn has a straight taper

(Deposition of Walter H. Miller.)

as compared to the Nielsen horn.

Q. 119. Please compare the shape of the Edison straight horn with the shape of the horn shown in Figures 5 of the two Villy Patents.

A. They are the same shape.

Q. 120. Have you considered the French Turpin Patent and Figs. 14, 15 and 16, thereof and do you understand the construction of the horn shown in those figures and described in the Turpin Patent?

A. I have and understand the construction described.

Q. 121. Please state what the construction of the horn shown in those figures of the French Turpin Patent is.

By Mr. MILLER.—Question objected to on the ground that the description of the patent is the best evidence unless the text of the patent be so ambiguous and *untelligible* as to require further explanation.

A. On figure 8 in this patent the body of the horn is composed of tapering strips of wood which are fastened at their edges by means of strips of wood on the inside or they can be fastened by wood or metal strips on the outside. Figure 14 states that the horn can be made bell-shaped by cutting the strips and bending them. These strips at their ends are inserted in an overlapped ring to hold their ends forming the large end of the horn, and the ends of the strips are fastened to a metal end piece, this end piece being inserted inside of the strips, an additional metal flange going around the outside

(Deposition of Walter H. Miller.)

of the strips and soldered to the end-piece. In order that it might better keep its shape he describes a ring which goes around the horn about one-third the distance from the [298] large end of the horn and held there with rods extending from this ring to the metal end-piece.

Q. 122. From your knowledge of this art and from a reading of the French Turpin Patent, can you say what material the skilled mechanic would have known might have been used in the construction of the horns such as those shown in Figs. 8 and 14 of the French Turpin Patent at the date of publication of that patent, October 25, 1902?

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial and not calling for a statement of fact but for an opinion on a subject concerning which this witness is not qualified or competent to give an opinion.

By Mr. HICKS.—It appears from the testimony of the witness that on October 25, 1902, he was familiar with this art and then had the knowledge of the skilled mechanic in the art. It also appears that he is familiar with the French Turpin Patent and is at the present time an expert in the art.

By Mr. MILLER.—I do not agree to the correctness of the statement but challenge the same.

A. The material that could have been used would be preferably sheet-metal but the horn could also be constructed of wood, celluloid, paper.

Q. 123. Can you say whether at that date, October 25, 1902, the knowledge existing in this art with ref-

(Deposition of Walter H. Miller.)

ence to the construction of horns for phonographs and similar machines was sufficient or insufficient to enable a mechanic skilled in the art to substitute one material for another in the construction of a horn for phonographs according to the design desired?

By Mr. MILLER.—Same objection as to Q. 122.

A. I should say it was.

Q. 124. You would say it was sufficient or insufficient, which?

By Mr. MILLER.—Same objection as before also suggestive of the answer desired.

A. It was sufficient. [299]

Q. 125. Please refer to Fig. III of the U. S. Patent No. 453,798 of June 9, 1891, and to Fig. 2 of U. S. Patent No. 491,421 of Feb. 17, 1893, both to Gersdorff and state whether the instrument shown therein and described in the specification *x* could be used as a horn for phonographs and similar machines or whether any change would be necessary in such instrument in order to adapt it for such use.

By Mr. MILLER.—Same objection as to Q. 122.

A. This instrument will reproduce quite satisfactory provided the small end of same was large enough.

Q. 126. Have you here present any metal horn used to your knowledge for reproducing sound from a phonograph in the comparatively early days of the are?

A. I have and here it is.